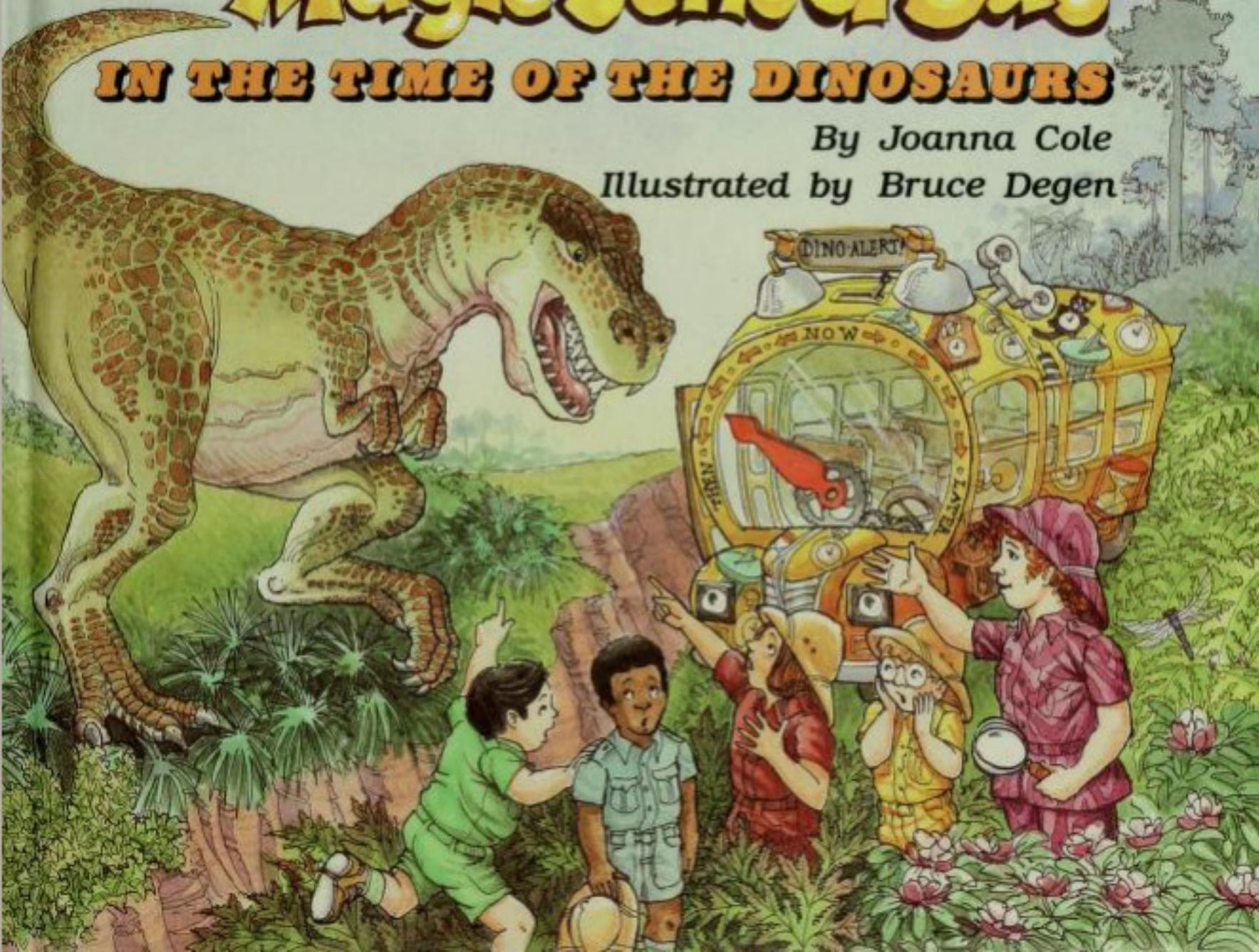


# The Magic School Bus

## IN THE TIME OF THE DINOSAURS

By Joanna Cole

Illustrated by Bruce Degen

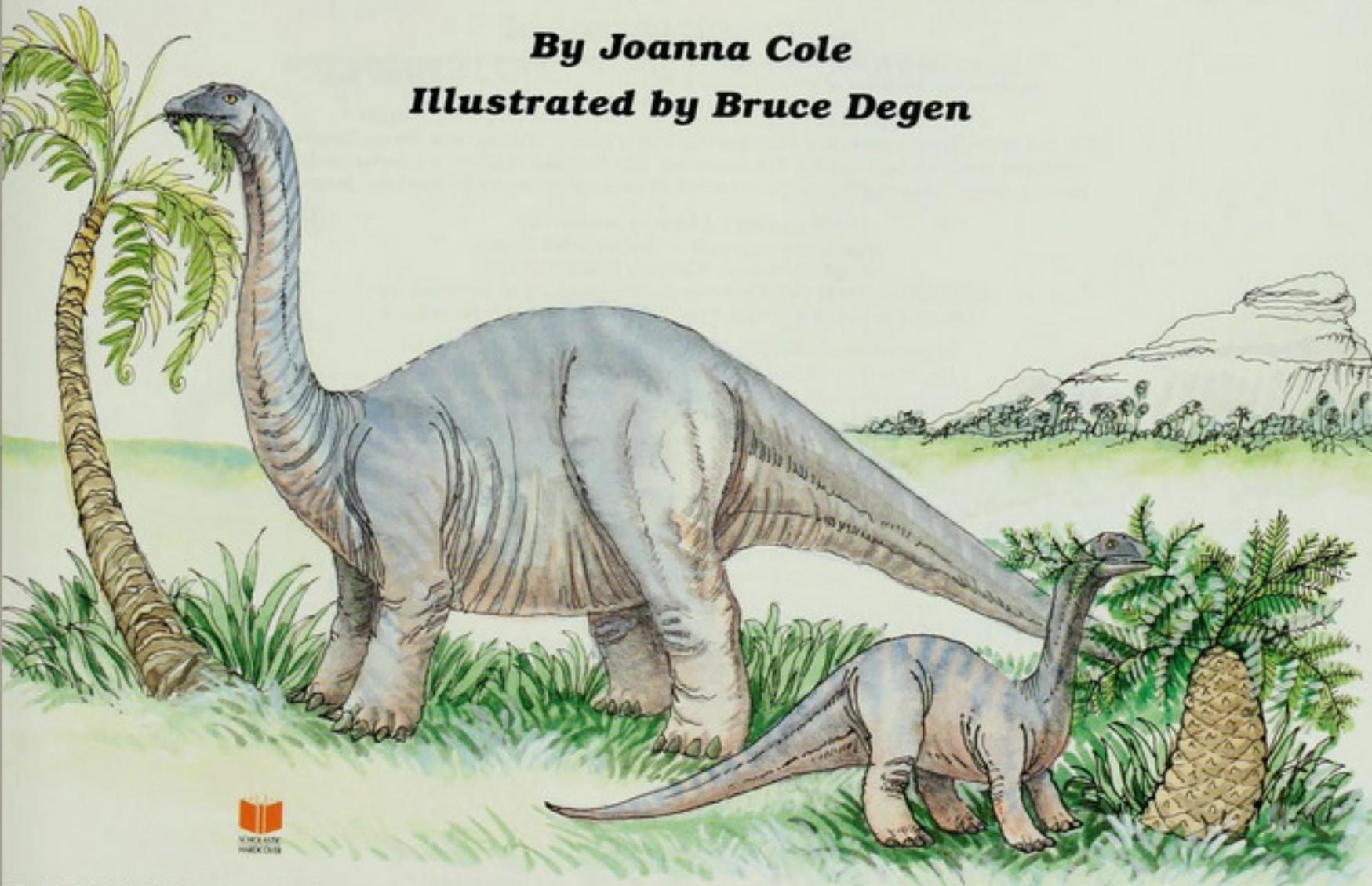




# ***The Magic School Bus in the Time of the Dinosaurs***

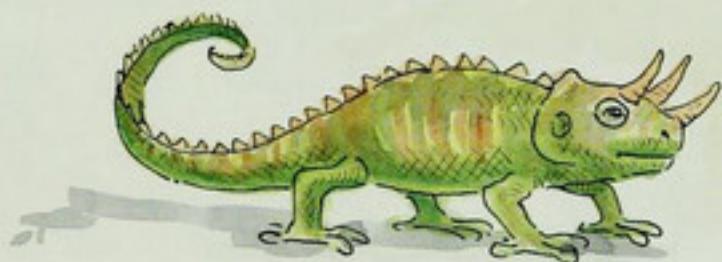
**By Joanna Cole**

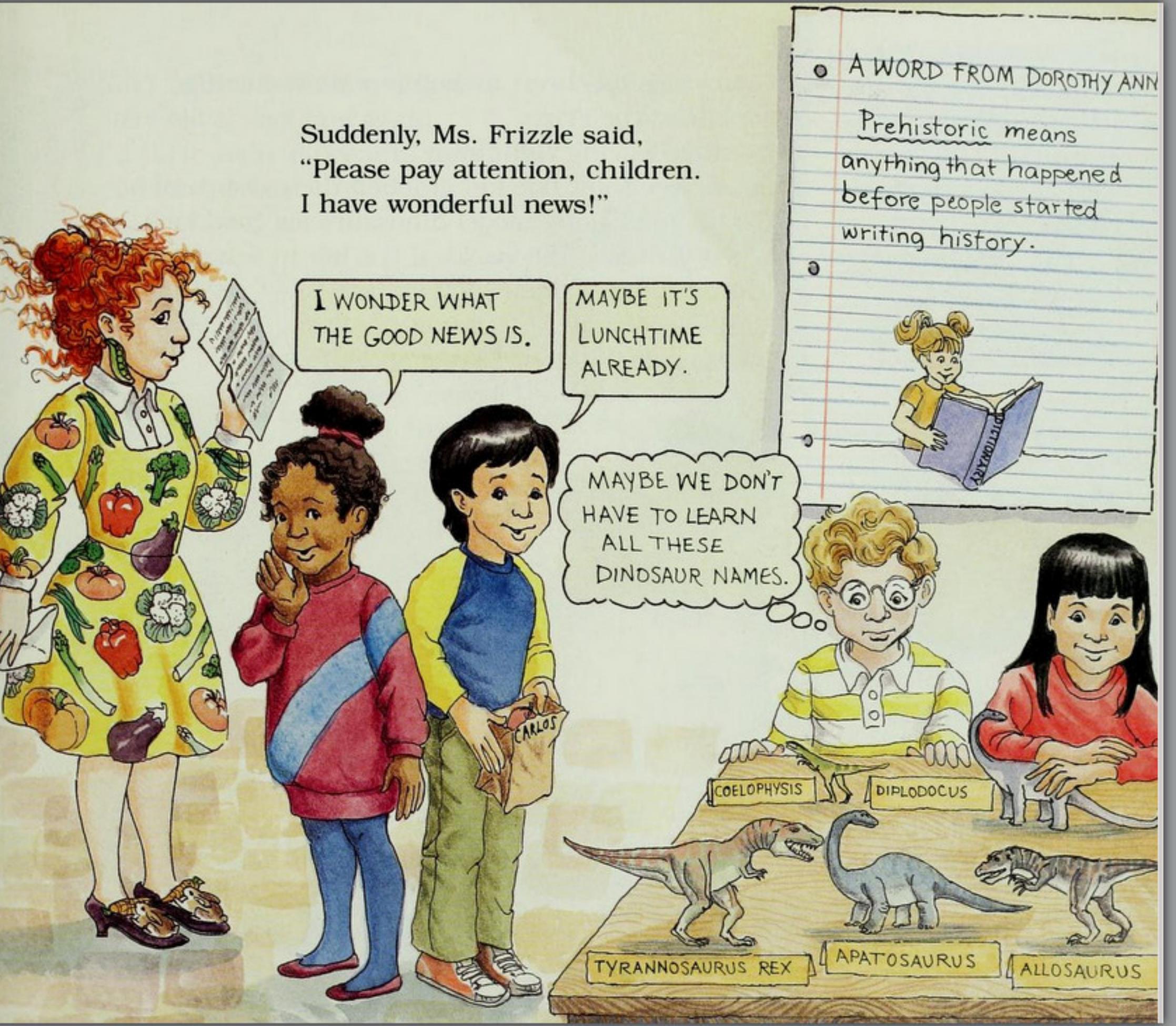
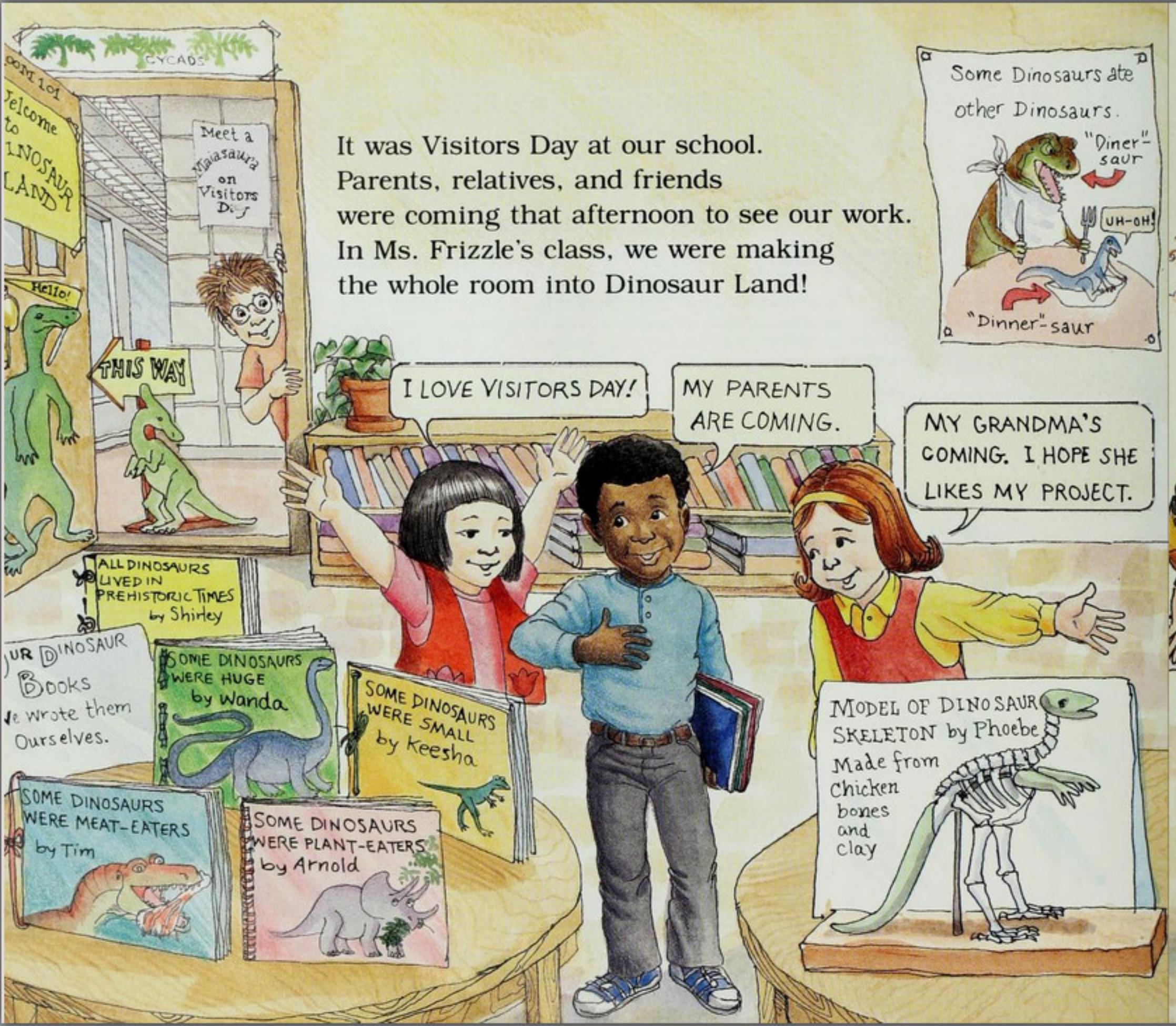
**Illustrated by Bruce Degen**



**CHOLASTIC INC. / New York**

To Armand Morgan,  
our personal guide to the time of the dinosaurs  
J.C. & B.D.

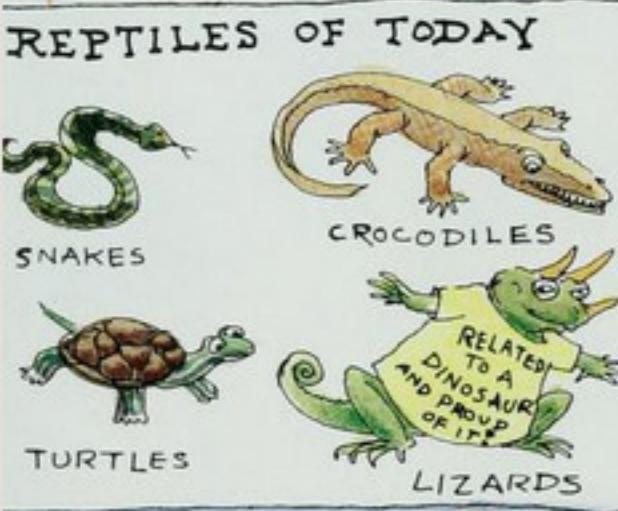




• DINOSAURS WERE REPTILES  
by Carlos  
Dinosaurs were a group of special prehistoric reptiles. Reptiles are animals that:

- have backbones
- have scaly skin
- lay eggs
- are cold-blooded

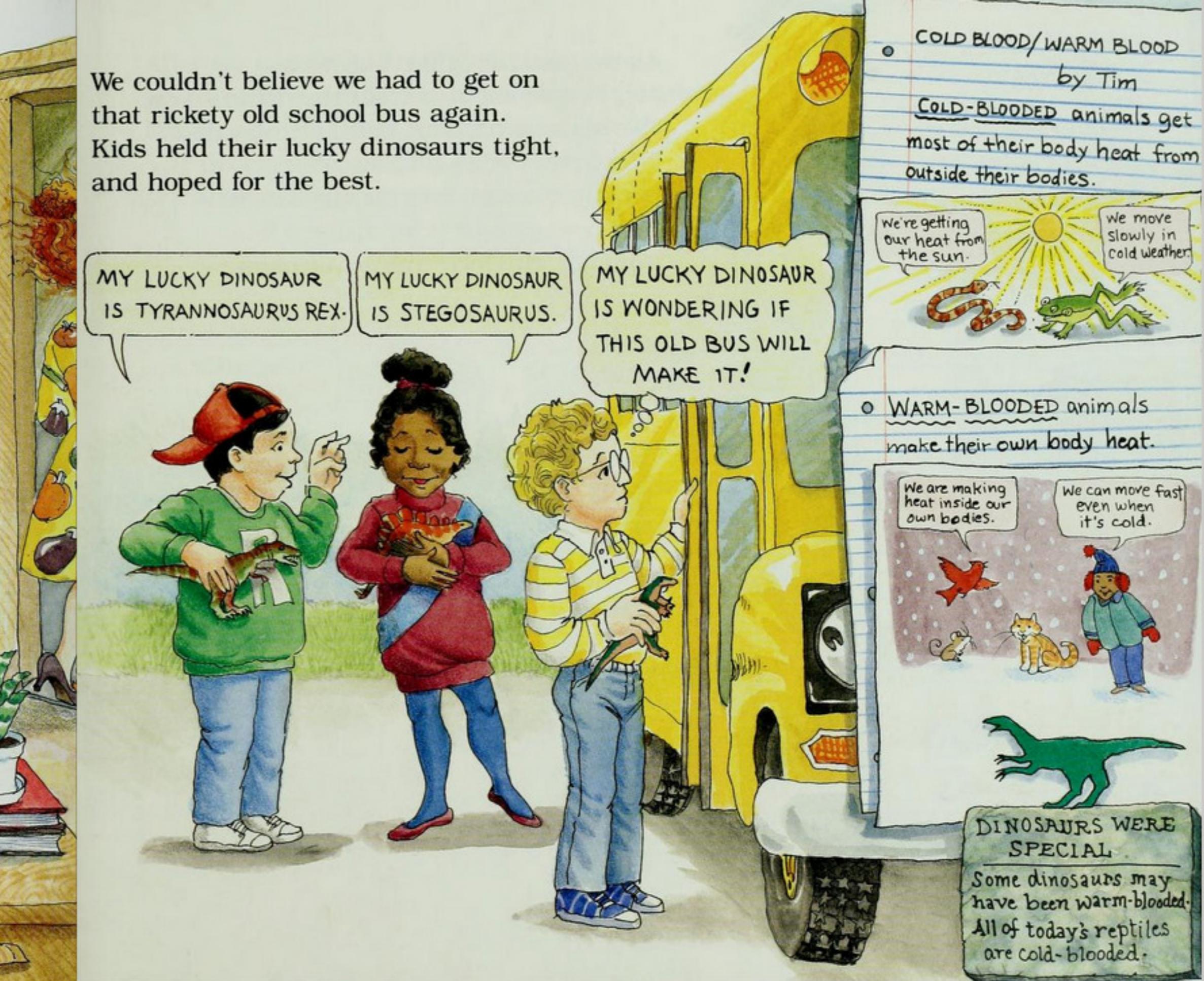
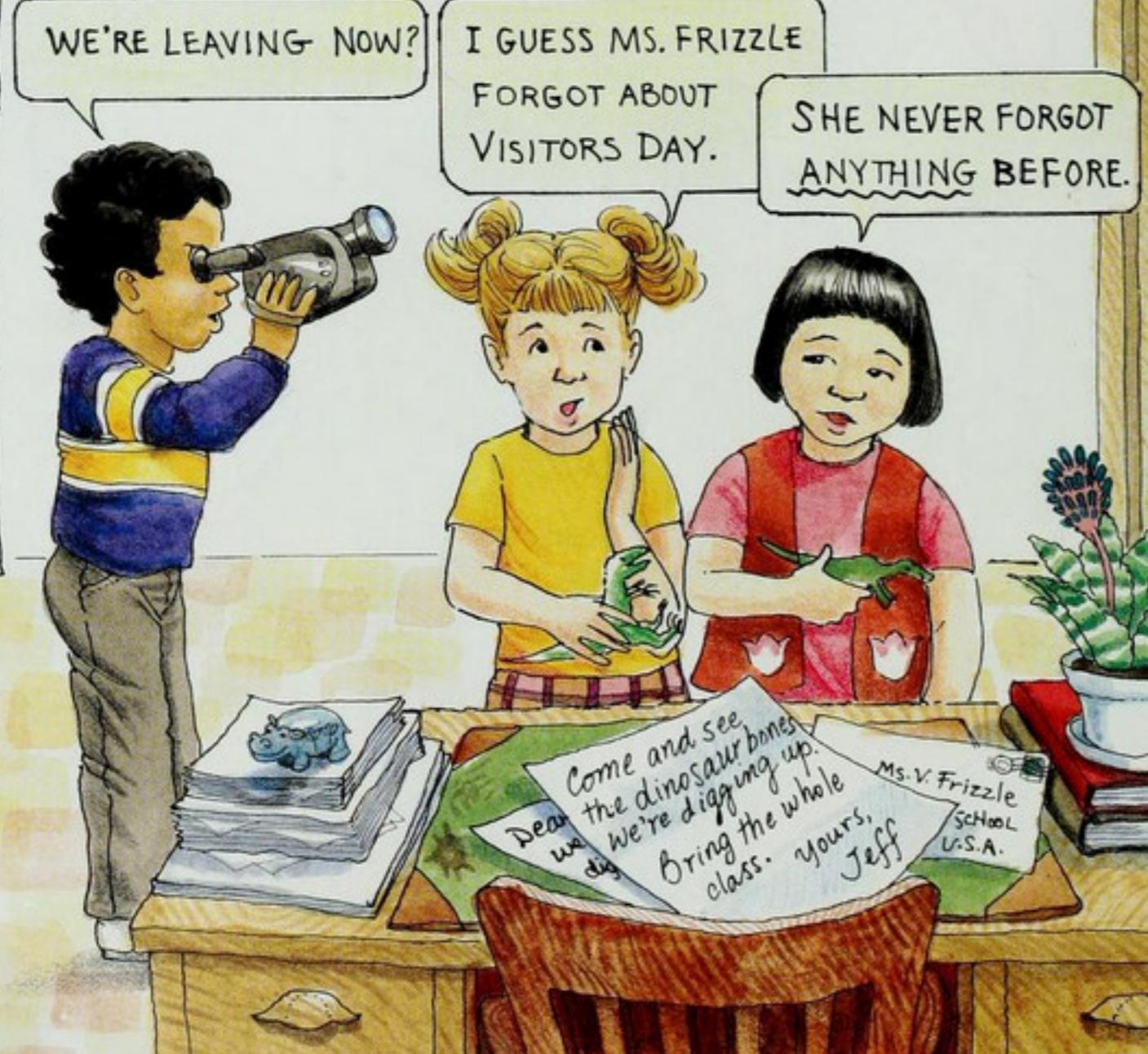
REPTILES OF TODAY



SNAKES  
CROCODILES  
TURTLES  
LIZARDS

DINOSAURS WERE SPECIAL  
Dinosaurs had straight legs. They could walk or run fast.  
Today's reptiles have sprawled-out legs.

"Our class has been invited to a dinosaur dig," explained the Friz.  
"We'll be leaving right away."  
As we went out, one kid grabbed the video camera.  
Others took along model dinosaurs for good luck.  
When you have the wackiest teacher in school,  
you need all the luck you can get!



NO PEOPLE EVER SAW  
A DINOSAUR  
by Florrie  
When early humans  
appeared on earth,  
dinosaurs had already  
been dead for millions  
of years!

People found out about  
dinosaurs from fossils.



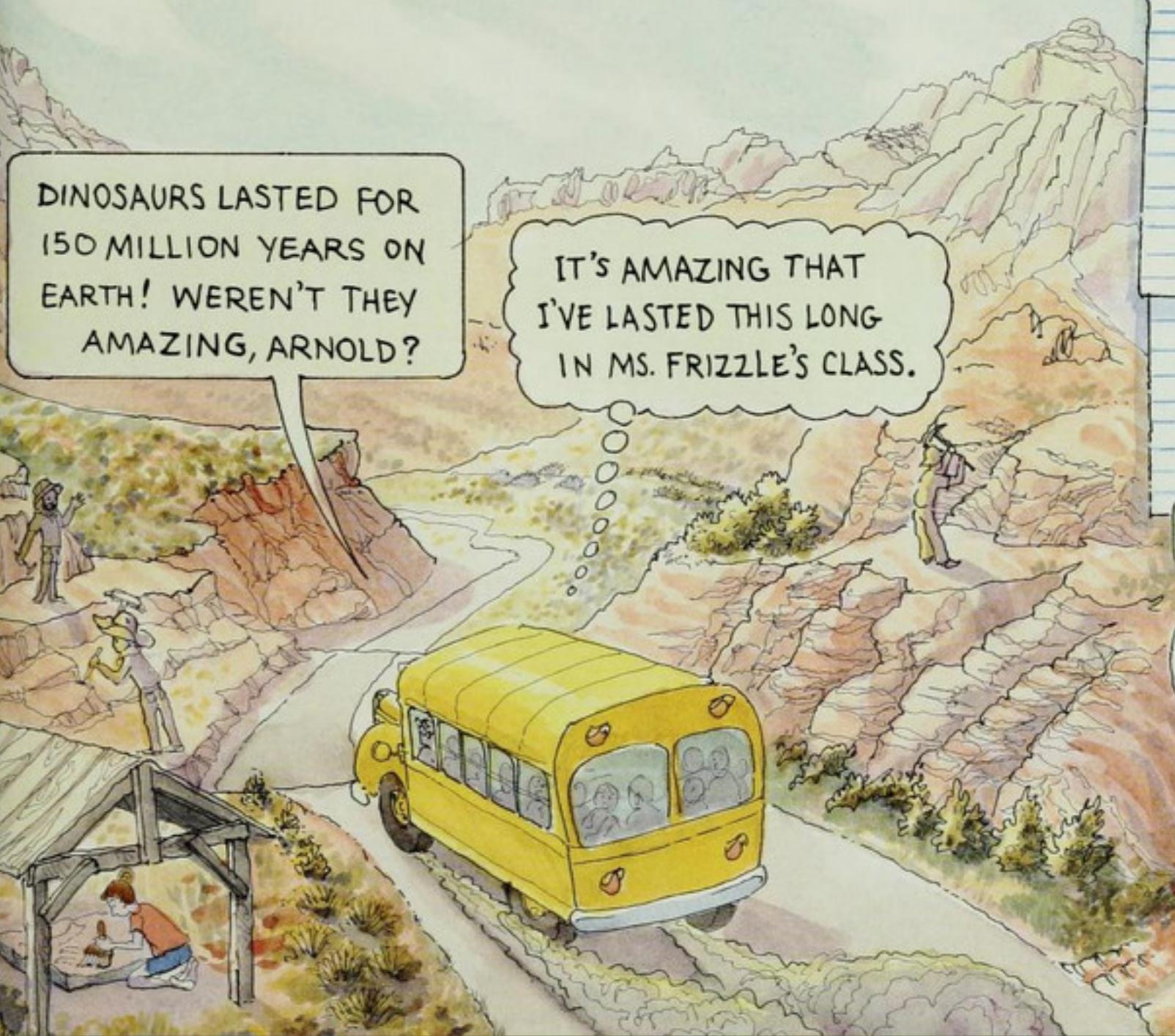
FIVE KINDS OF DINOSAUR  
FOSSILS  
by Alex

- 1. BONES
- 2. TEETH
- 3. FOOTPRINTS
- 4. SKIN PRINTS
- 5. EGGS AND NESTS



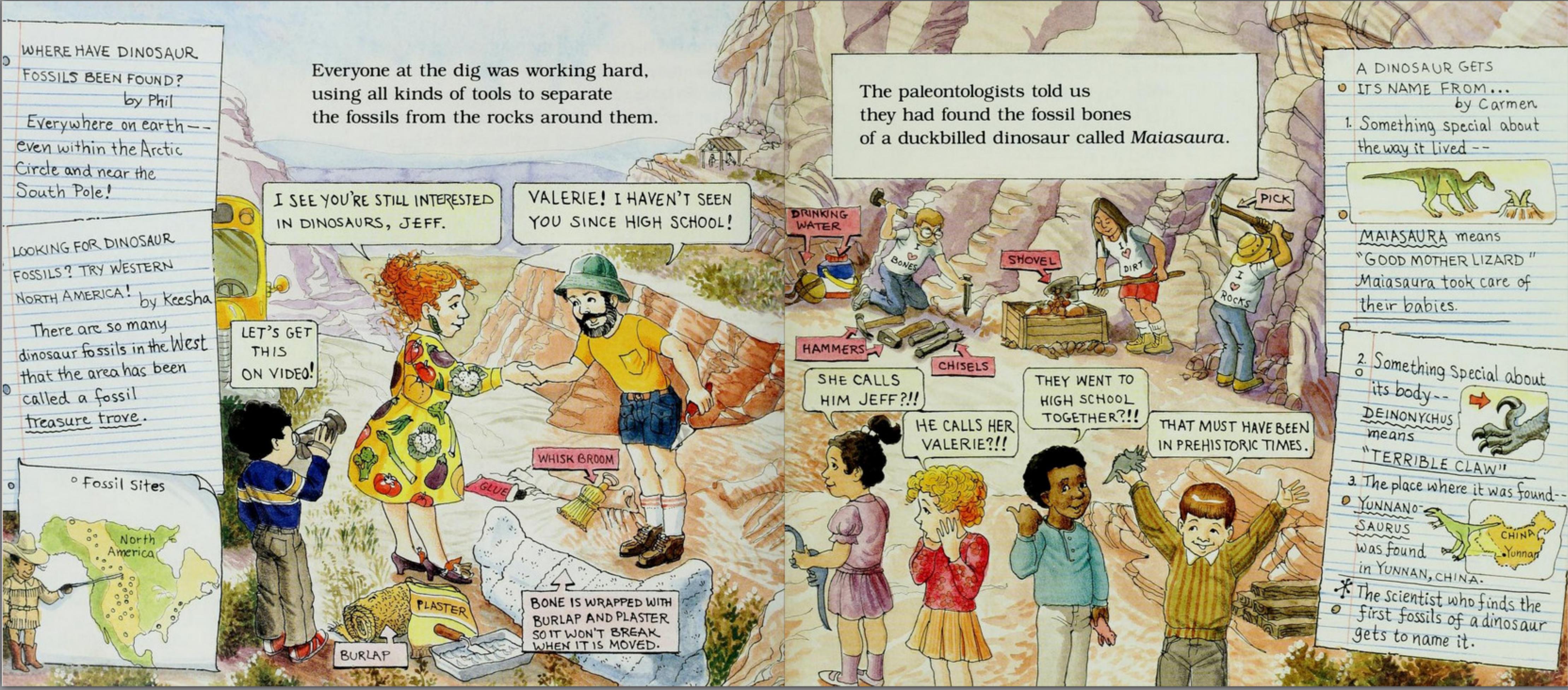
As we rolled onto the highway,  
Ms. Frizzle shouted from the driver's seat,  
"We're on our way to fossil country, kids!  
Who knows what a fossil is?"  
Luckily, we had done our homework.  
We knew a fossil is anything left  
from a prehistoric animal or plant.

After we had been driving for a long time,  
we came to a desert where people were working.  
Ms. Frizzle said this was the dinosaur dig.  
The people were paleontologists —  
scientists who study prehistoric life.



- HOW A DEAD DINOSAUR  
COULD BECOME A FOSSIL  
by Carrie
- 1. The dead body  
sank in a river,  
and rotted away.
- 2. The bones were  
covered with  
sand.
- 3. In time, the  
sand turned  
into rocks.
- 4. The bones  
became hard  
as rock, too.

DINOSAURS WERE SPECIAL  
Dinosaurs were on earth  
1500 times longer than  
humans have been so far.



HOW CAN WE TELL WHICH BONES  
ARE WHICH? by Shirley

Paleontologists compare  
dinosaur bones with the  
bones of other animals.

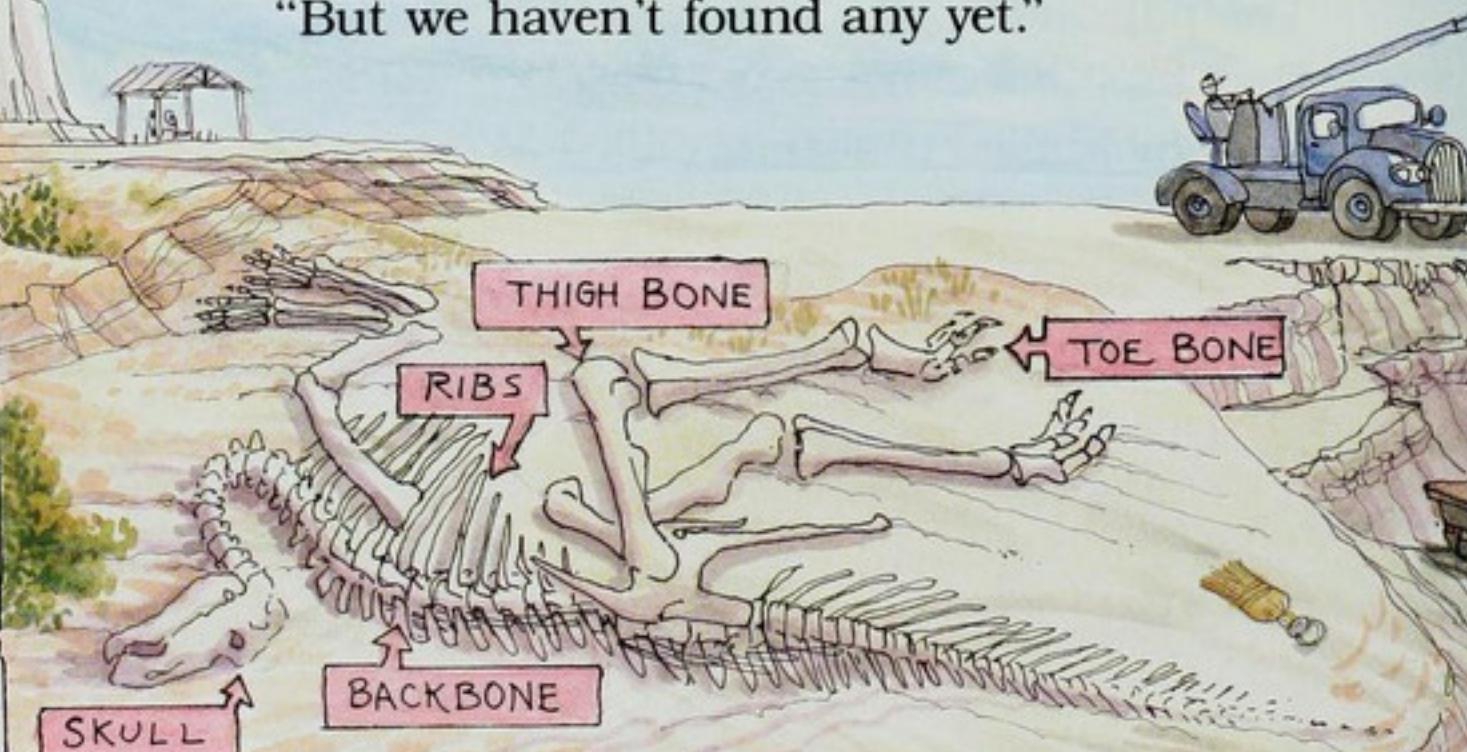
For example, if you know the  
thigh bone of a...



HUMAN  
...you will be able to tell  
the thigh bone of  
a dinosaur.

MAIASAURA

The paleontologists seemed sad.  
"We were looking for fossil eggs," they said.  
"But we haven't found any yet."

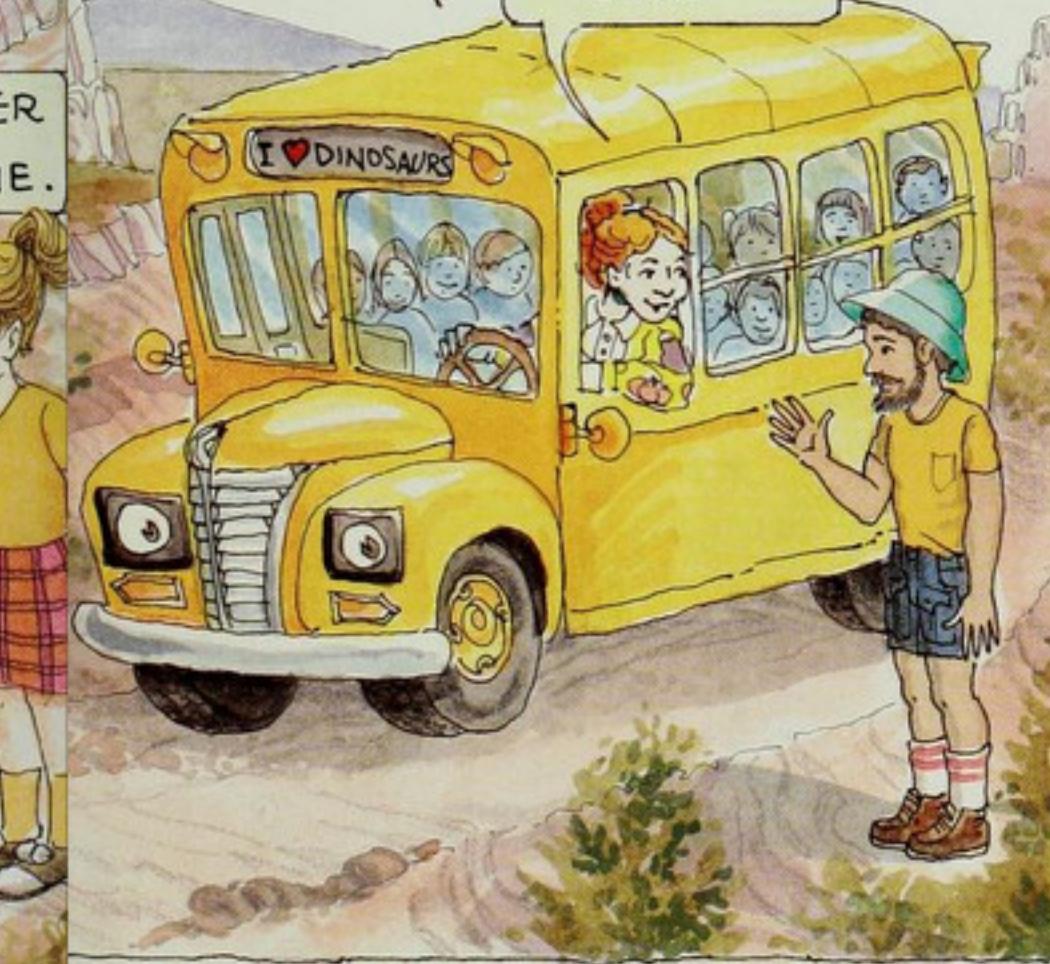


WE FOUND THE BONES  
OF SOME MAIASAURA  
DINOSAURS, VALERIE.  
WE WERE HOPING  
TO FIND  
THEIR NESTS.  
I DIDN'T KNOW HER  
NAME WAS VALERIE.



We saw a gleam in Ms. Frizzle's eye.  
"Want to look for some *Maiasaura* nests,  
kids?" she shouted.  
She rushed us onto the bus  
and drove off.

BUT WE JUST  
GOT HERE.  
I WANT TO  
LOOK AT  
THAT CRANE.  
I WANT TO SEE  
THE DINOSAUR  
BONE.  
SEE YOU LATER,  
JEFF.



We hadn't gone far when Ms. Frizzle  
stopped the bus.  
She turned a dial on the dashboard,  
and the bus began to change.  
It looked like a giant alarm clock.  
Ms. Frizzle said it was a time machine!

NOW I'VE SEEN EVERYTHING.

THIS BUS IS GETTING  
RIDICULOUS.

MAIASAURA WERE  
SOME OF THE VERY  
LAST DINOSAURS  
ON EARTH.



## HOW DO WE FIGURE OUT

- WHAT DINOSAURS LOOKED LIKE?  
by Ralphie
- Scientists put dinosaur bones together.
  - 1. They figure out how the muscles were attached from marks on bones.
  - 2. They know what the skin was like from fossil skin prints
  - 3. They guess dinosaur colors by looking at today's animals.

The hand on the clock started moving backward:

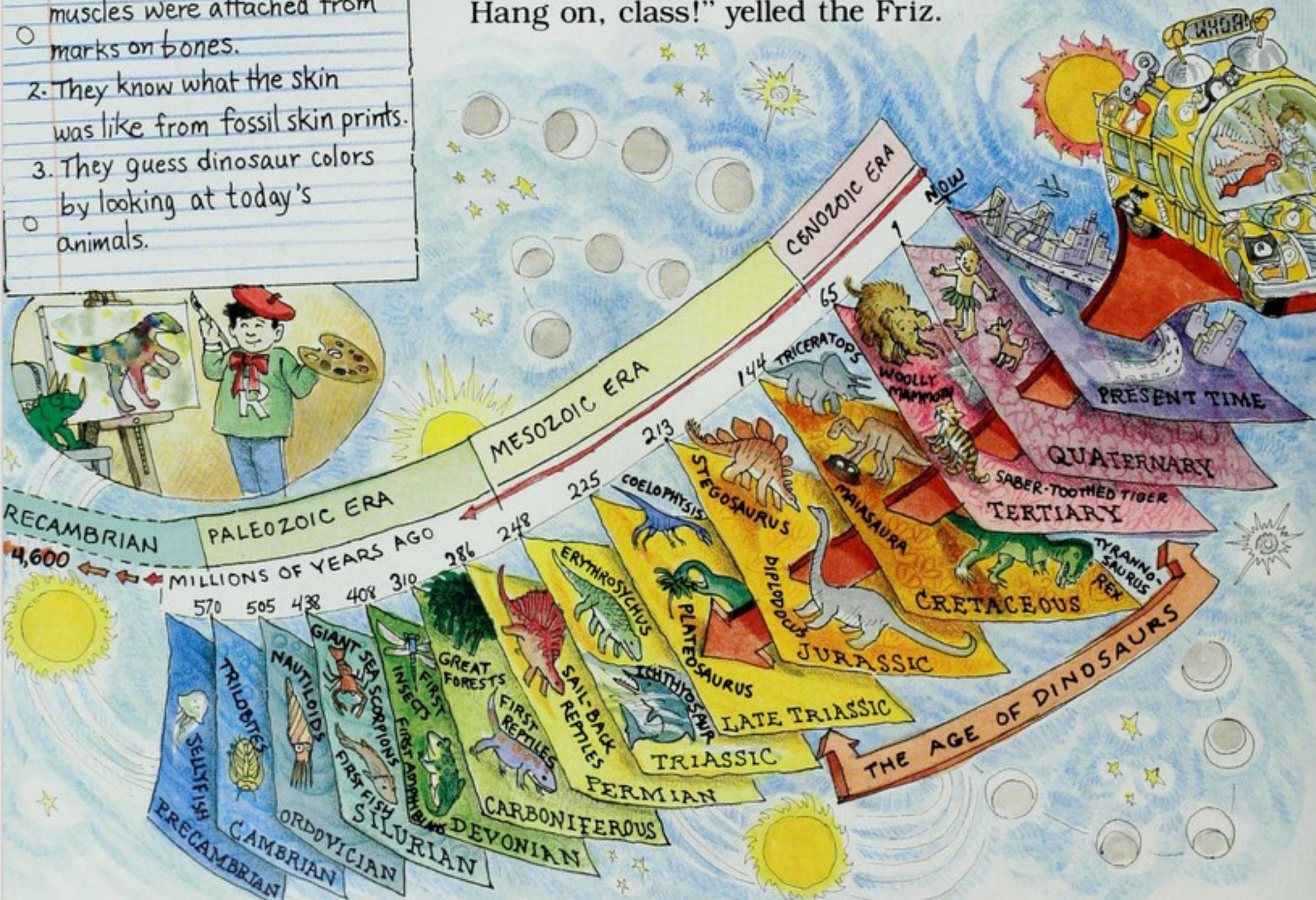
*One hour back . . . one day back . . . one year back . . .*

Outside the windows, the desert was whizzing by.

*One thousand years . . . one million years . . .*

"We're on our way to the time of the *Maiasaura*.

"Hang on, class!" yelled the Friz.



*Ring! Ring! The alarm went off.*

We heard Ms. Frizzle say, "Ooops!"

We had a little machine trouble.

We went back too far in time.

“It won't be far in time, but it's nothing to worry about.”

Nothing to worry about!

Nothing to worry about!  
We missed the time of the *Maiasaura*  
by millions of years!

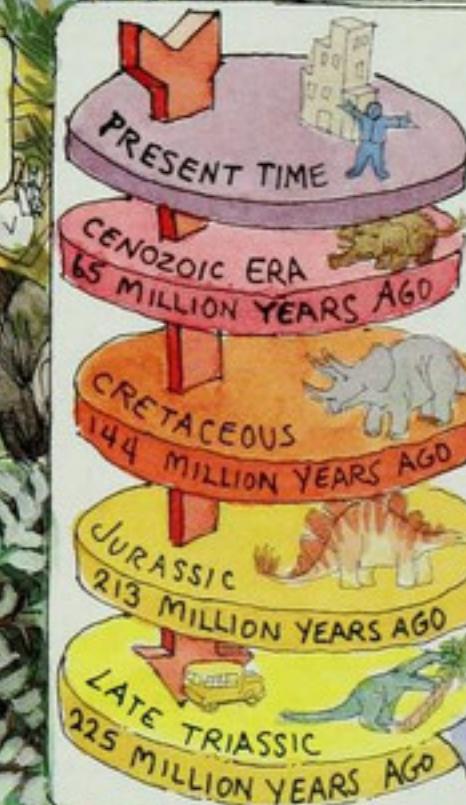


WHAT WAS THE EARTH  
LIKE THEN?



One giant continent  
called PANGAEA

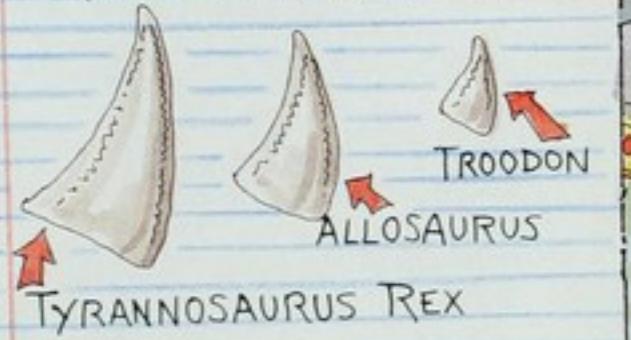
- Rainy Jungles
- Many deserts
- Warm temperatures
- No winter anywhere!



FOSSIL TEETH TELL WHAT  
O DINOSAURS ATE

by Phoebe

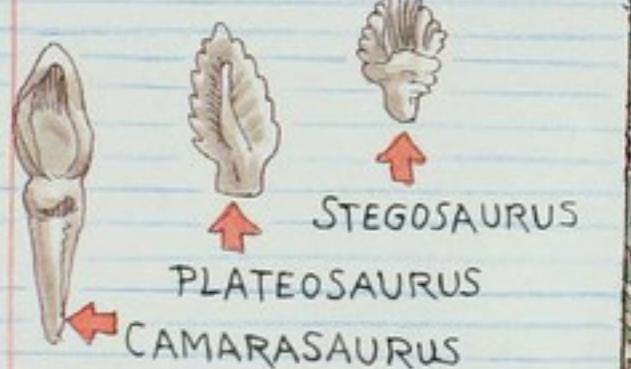
Sharp, pointy teeth  
came from meat-eaters.



- O TROODON
- O ALLOSaurus
- O TYRANNOSAURUS REX



Odd-shaped teeth  
came from plant-eaters.



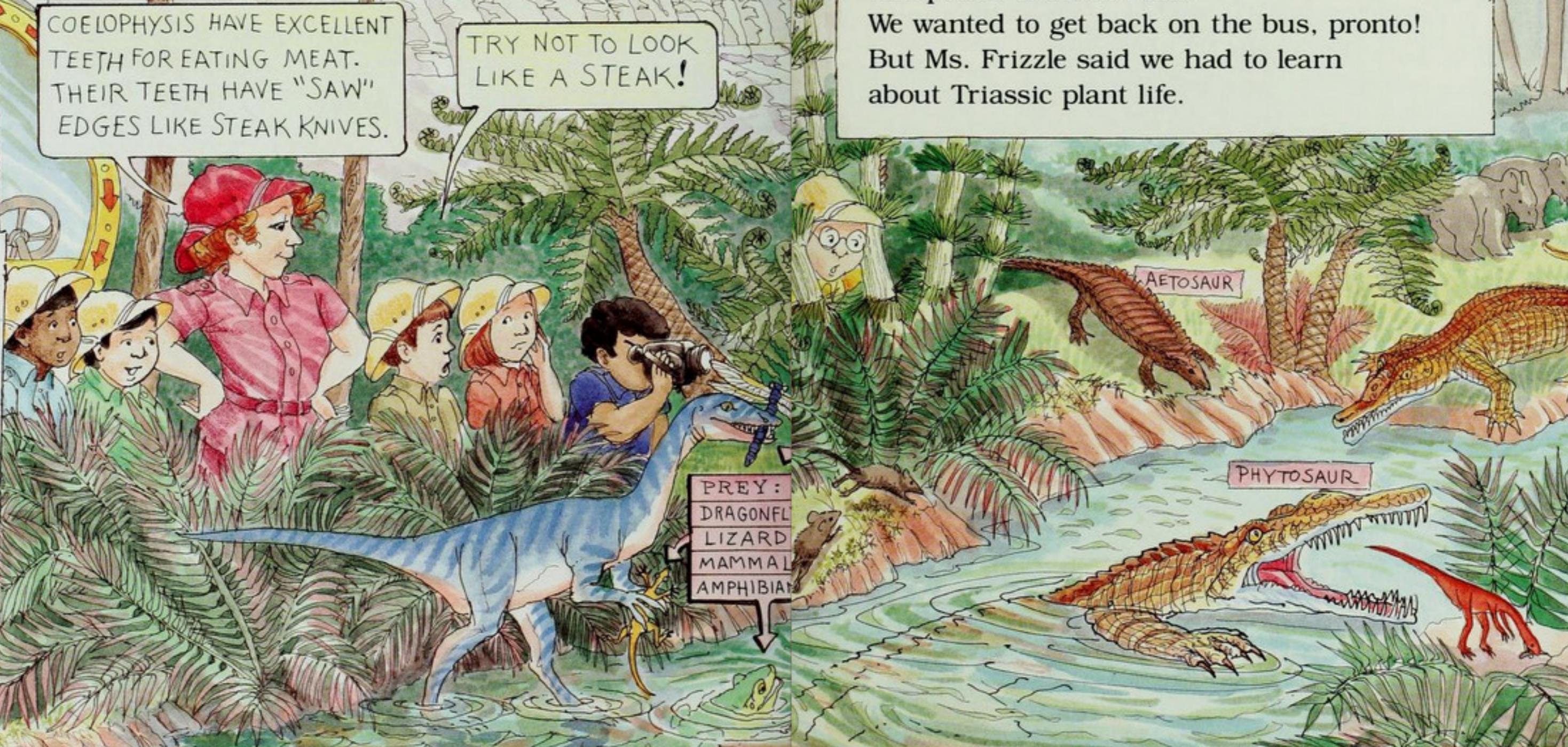
- O STEGOSAURUS
- O PLATEOSAURUS
- O CAMARASAURUS

- O TROODON
- O ALLOSaurus
- O TYRANNOSAURUS REX

The Friz pointed to some dinosaurs  
that were hunting on the banks of a river.  
"Their name is *Coelophysis*," she said.  
"These early dinosaurs were small and light.  
The giant dinosaurs did not develop until later."

COELOPHYSIS HAVE EXCELLENT  
TEETH FOR EATING MEAT.  
THEIR TEETH HAVE "SAW"  
EDGES LIKE STEAK KNIVES.

TRY NOT TO LOOK  
LIKE A STEAK!



Suddenly, a large reptile rose out of the water  
and opened its huge mouth.

"That is not a dinosaur," Ms. Frizzle said.  
"It's a phytosaur — a crocodile-like reptile."  
The phytosaur caught a little dinosaur  
and pulled it underwater.

We wanted to get back on the bus, pronto!  
But Ms. Frizzle said we had to learn  
about Triassic plant life.

ARE MEAT-EATERS MEAN?

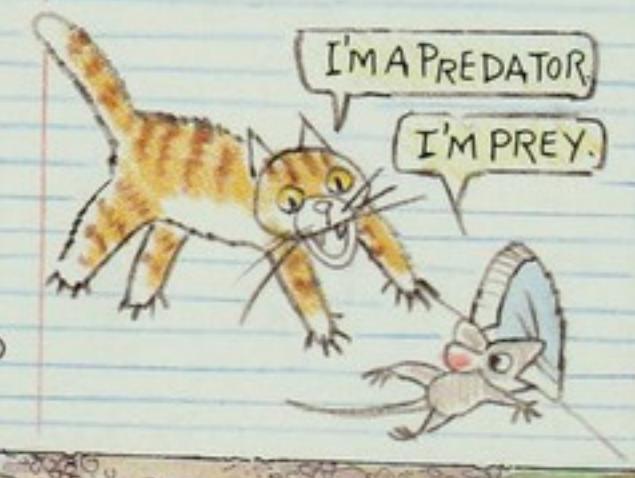
by Arnold

No. Predators are part  
of nature. Hunting is  
the only way they can  
get their food.



SOME WORDS FROM  
DOROTHY ANN

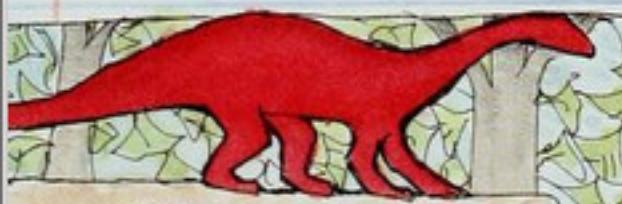
A predator is a  
hunting animal.  
Prey are the animals  
a predator hunts.



## TRIASSIC PLANTS

by John

In Triassic times  
you would see:



Many dinosaurs were  
plant-eaters. Only a few  
kinds of modern  
reptiles are.

Plateosaur Tooth

## GINGKOS

We were examining some ferns  
when Ms. Frizzle shouted,  
"Look at those terrific prosauropods!  
They were the first dinosaurs to eat plants!"

I JUST LOVE  
TRIASSIC PLANTS,  
CLASS--DON'T YOU?

DO YOU HEAR  
SOMETHING?

YOU MEAN THOSE  
CRUNCHING  
SOUNDS?

MS. FRIZZLE  
ISN'T THE ONLY  
ONE WHO LOVES  
TRIASSIC PLANTS.



A sudden downpour caught us by surprise  
But the dinosaurs went right on eating.  
We ran for the bus, and Frizzie called,  
"Get ready to go forward in time, kids!"

IN A TROPICAL FOREST,  
RAINS ARE FREQUENT  
AND HEAVY, ARNOLD.

NOW SHE  
TELLS ME!

JEFF WILL  
LOVE THIS  
VIDEO.



THE FIRST MAMMALS  
LIVED WITH DINOSAURS

by Rachel

The first true mammals  
lived in the Late Triassic.  
They were furry rat-like  
animals.



WHAT ARE MAMMALS?

by Wanda

Mammals are animals that:

- have backbones
- have hair or fur
- are warm-blooded



- feed their babies with  
mothers' milk

The last things we saw before we took off  
were some small, furry animals.

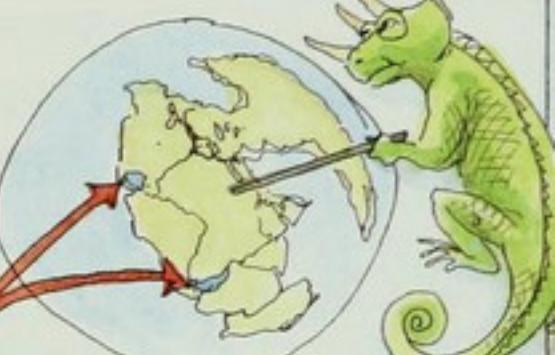
Ms. Frizzle said they were the first mammals.  
The hand on the clock moved ahead,  
and the Triassic rain forest whizzed out of sight.



Ring! Ring! The alarm went off,  
and we heard Ms. Frizzle say, "Oh no!"  
We had stopped too soon.  
It was the Late Jurassic Period,  
the Age of Giants!

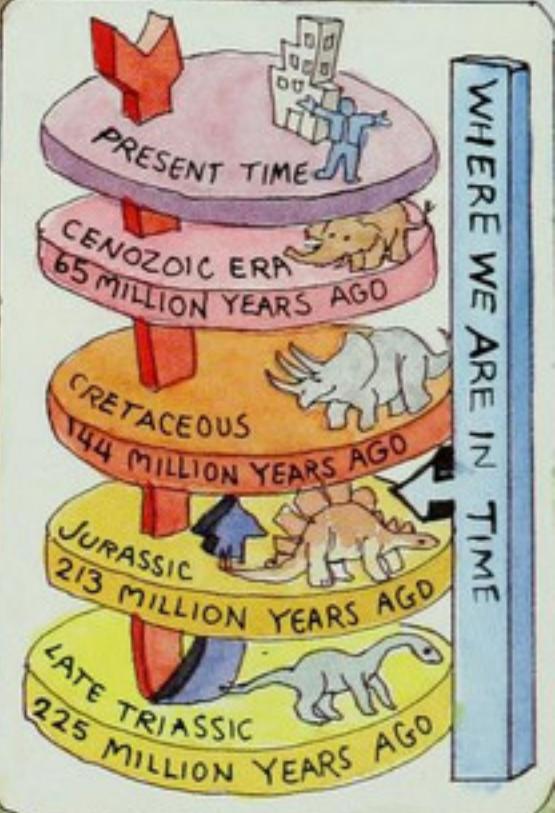


WHAT WAS THE EARTH LIKE  
THEN?



Continents were drifting apart.

- Swampy, low-lying plains
- Beginnings of inland seas
- Beginning of Atlantic Ocean
- Warm temperatures everywhere



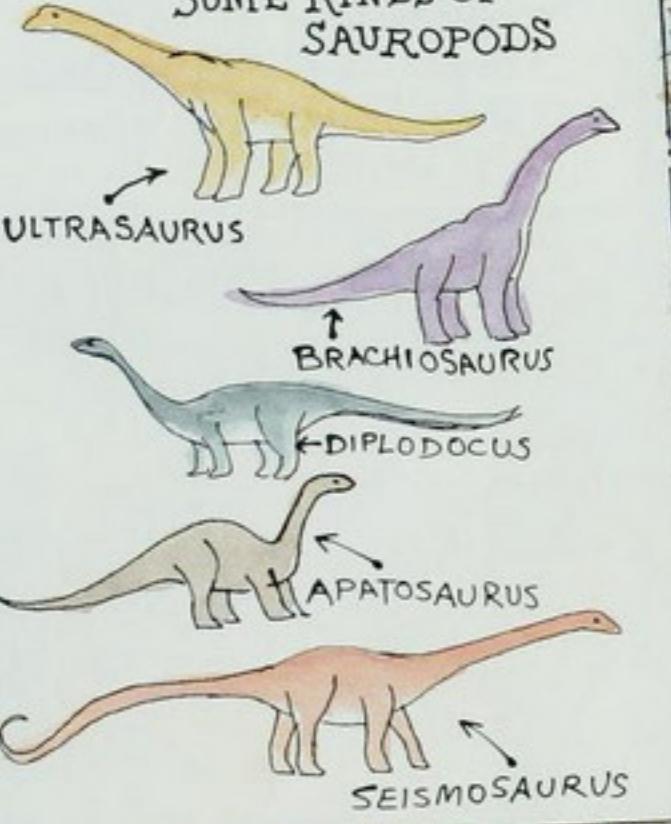
## WHAT WERE SAUROPODS?

by Amanda Jane

Sauropods were heavy, long-necked dinosaurs.

They walked on four legs and ate plants.

## SOME KINDS OF SAUROPODS



MILLION YEARS  
PASSED SINCE  
THEY WERE HERE LAST.

K! THOSE  
OPODS ARE  
LOWING THEIR  
OD WHOLE!

TEETH ARE  
GOOD FOR  
S, PHOEBE.

Y SWALLOW  
ONES TO GRIND UP  
D IN THEIR  
STOMACHS.

IT MUST TAKE A  
LOT OF PLANTS  
TO FEED A  
GIANT SAUROPOD.

EUROPODS MUST  
END MOST OF  
THEIR TIME EATING.

AT A LIFE!

DINOSAURS WERE SPECIAL  
Some dinosaurs may have  
traveled in herds!  
None of today's reptiles do.

"Notice these sauropod dinosaurs, children," said Ms. Frizzle. "They were kind of impossible to miss. They were the largest land animals that ever lived!"

IT MUST TAKE A LOT OF PLANTS TO FEED A GIANT SAUROPOD.

SAUROPODS MUST SPEND MOST OF THEIR TIME EATING.

WHAT A LIFE!

DINOSAURS WERE SPECIAL  
Some dinosaurs may have traveled in herds!  
None of today's reptiles do.

NO SWAMPS FOR SAUROPODS  
by Ralphie  
People used to think sauropods waded in swamps. But fossil footprints show  
they walked on land and may have traveled in herds.

THE FOOTPRINTS WERE MADE AT THE SAME TIME... AND THEY ARE ALL GOING IN THE SAME DIRECTION.

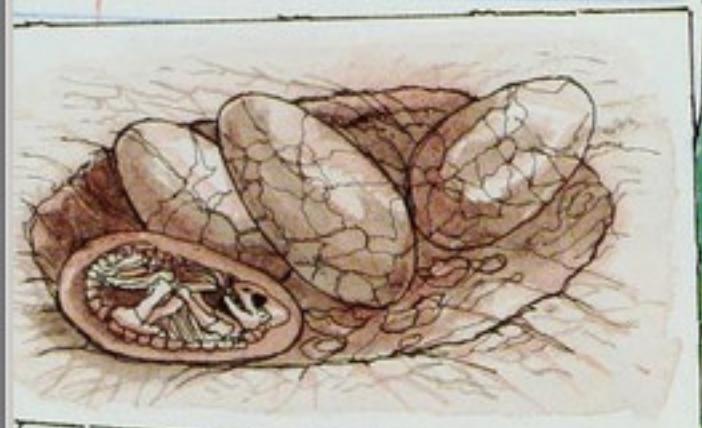
FOSSIL TRACKWAY  
OVERHEAD VIEW OF A DINOSAUR HERD  
A DINOSAUR HEARD WHAT?

## WE KNOW DINOSAURS

### ○ LAID EGGS

by Amanda Jane

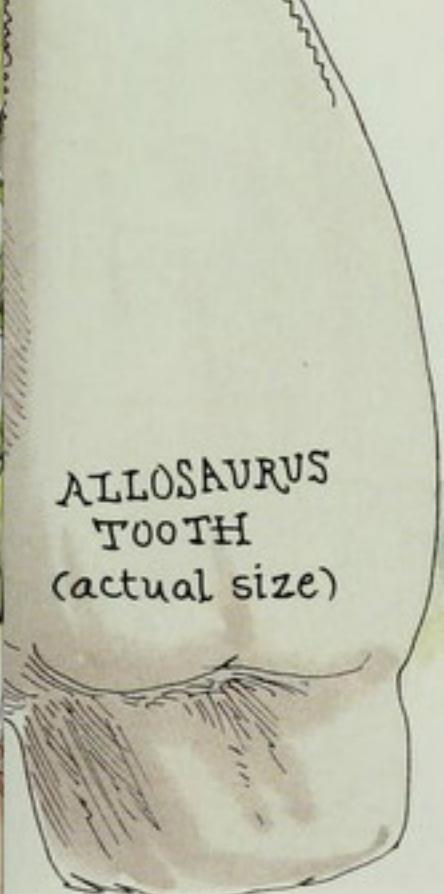
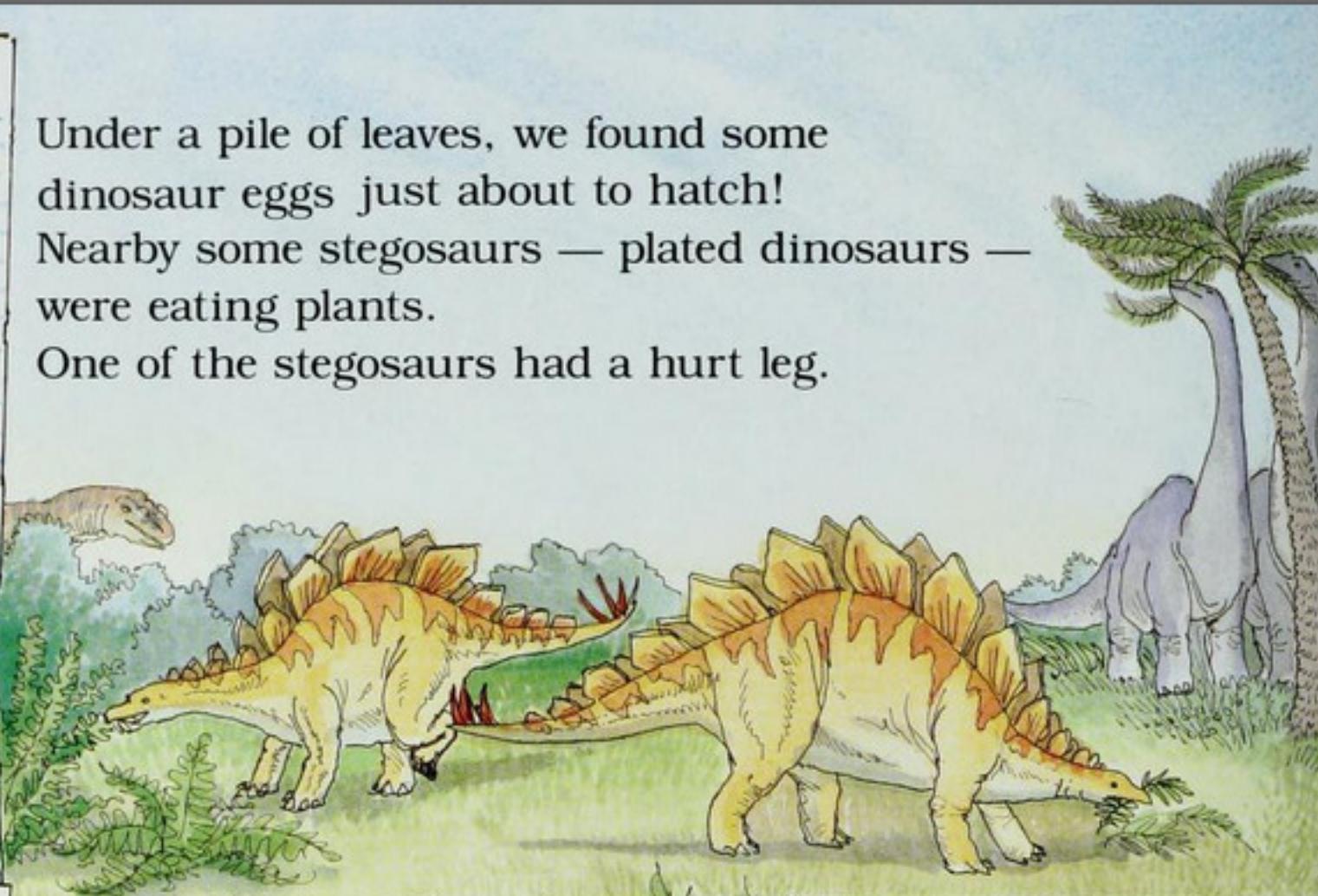
Fossil dinosaur eggs have been found. Inside some, there are tiny skeletons of babies.



### ○ HOW BIG WERE DINOSAUR EGGS?

by Molly

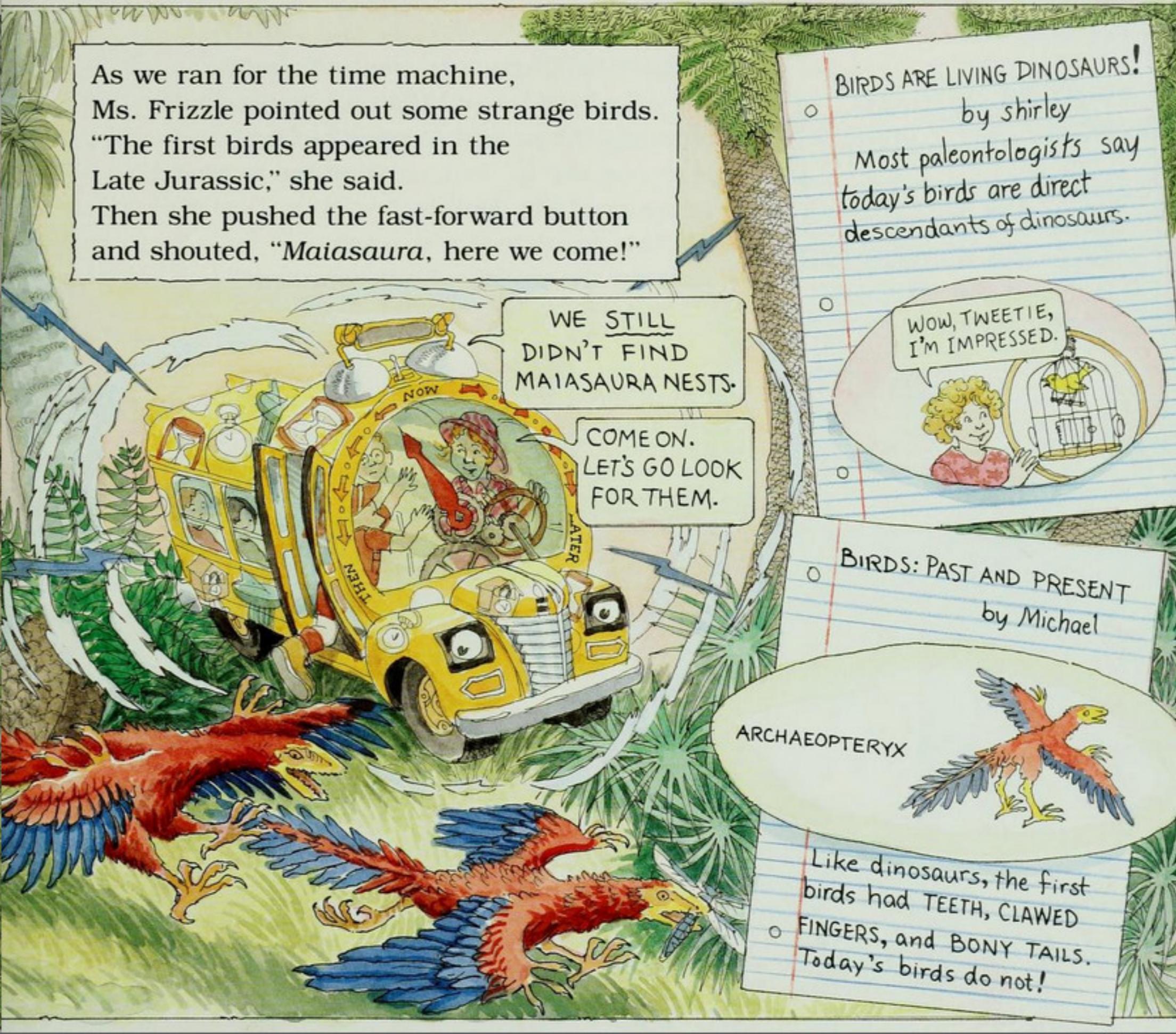
The largest dinosaur egg we have found was about the size of a football!

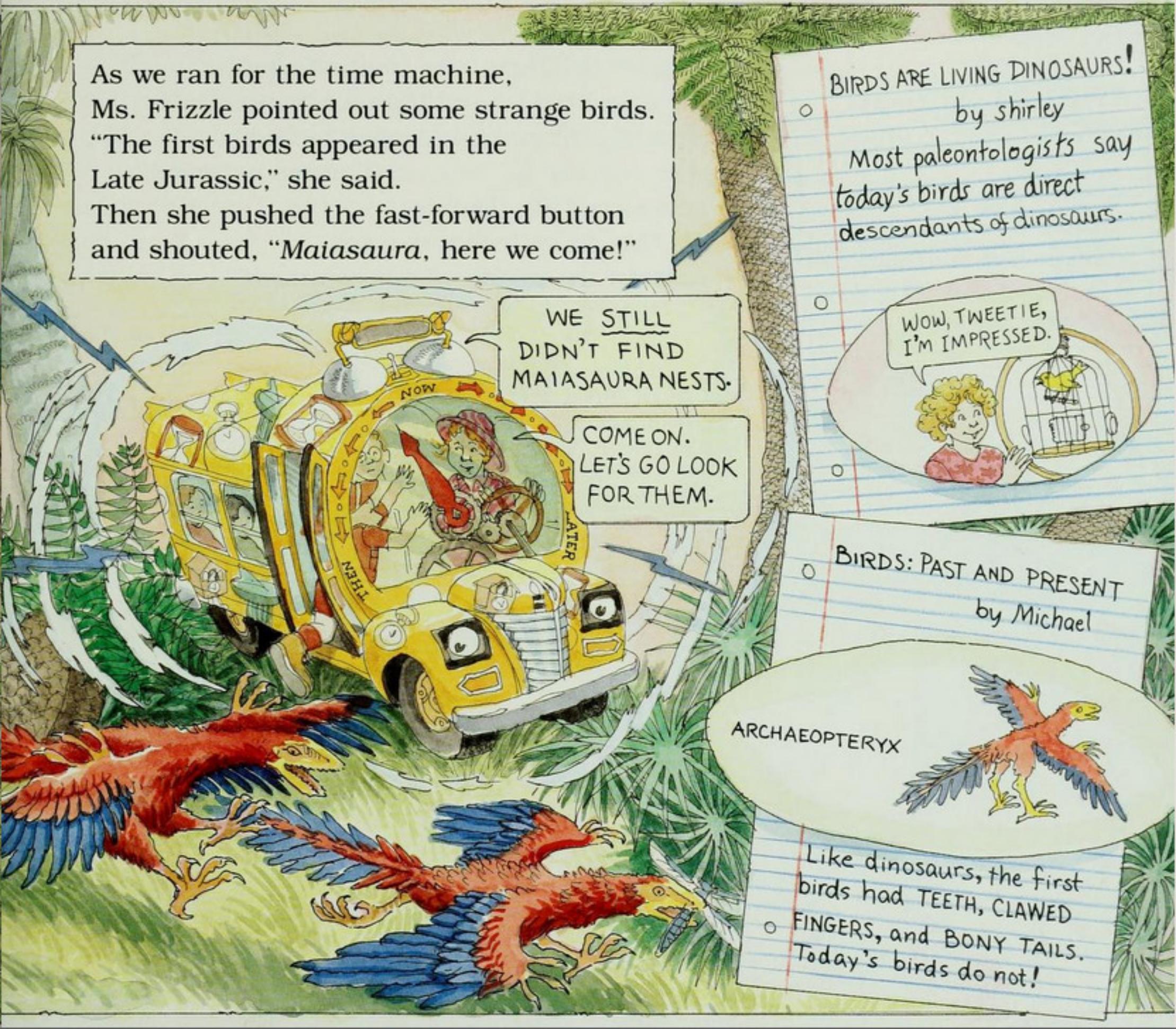


Suddenly an *Allosaurus* approached the wounded *Stegosaurus*. *Stegosaurus*'s spiked tail lashed out. It missed *Allosaurus* by an inch! What would happen next? We held our breath.



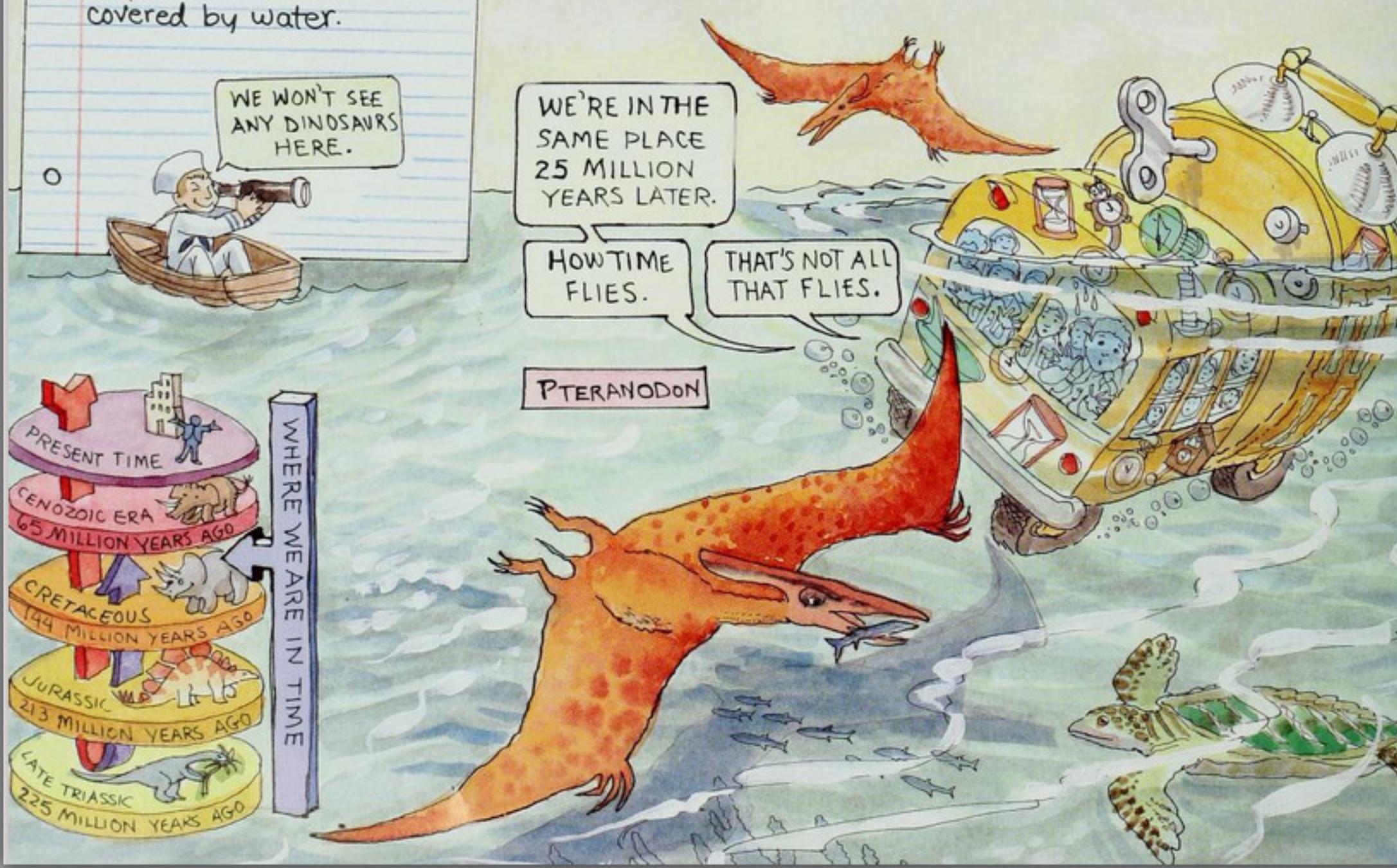
○ IT'S HARD TO BE A HUNTER  
by Alex  
Being a predator is dangerous. Predators can get hurt or killed by their prey. This is why meat-eaters often attack prey that is weak, sick, or young.



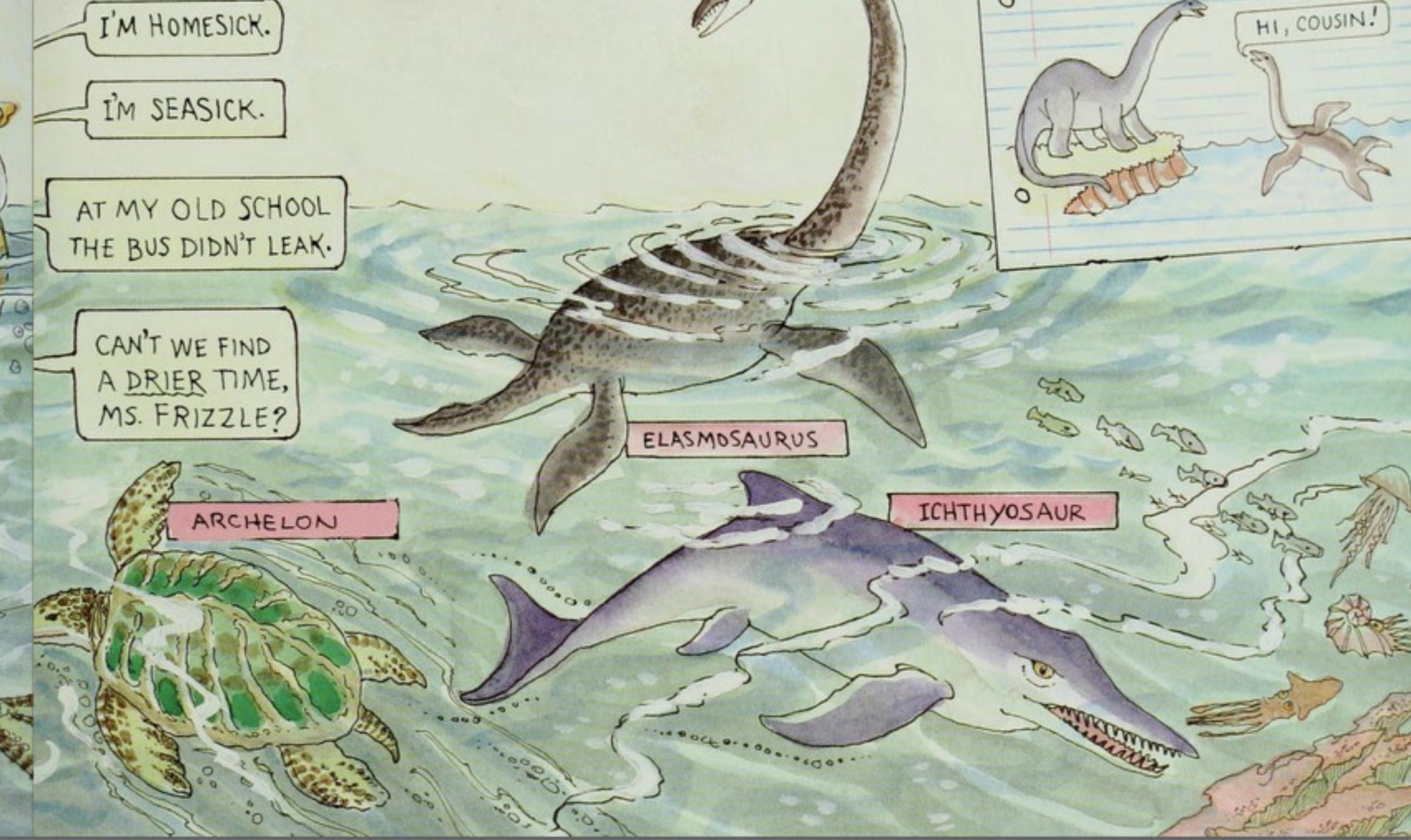


- o ALL DINOSAURS WERE LAND ANIMALS
  - by Gregory
- No dinosaurs lived in the sea. During the Cretaceous, dinosaurs lived in places that were not covered by water.
- o in places that were not covered by water.

*Ring! Ring!* The alarm went off again. We looked out — and then we freaked out! Once again, we had stopped too soon. "Here we are in the Late Cretaceous Period," announced Ms. Frizzle. "At this time there was a sea right in the middle of our continent."



Out the windows, enormous sea reptiles swam by. Overhead, flying reptiles glided past, dipping their beaks in the water to catch fish. We were getting a little wet, so the Friz set the clock ahead again.



- o SEA REPTILES AND FLYING REPTILES: WERE THEY DINOSAURS?
  - by Tim
- No, they were relatives of dinosaurs.

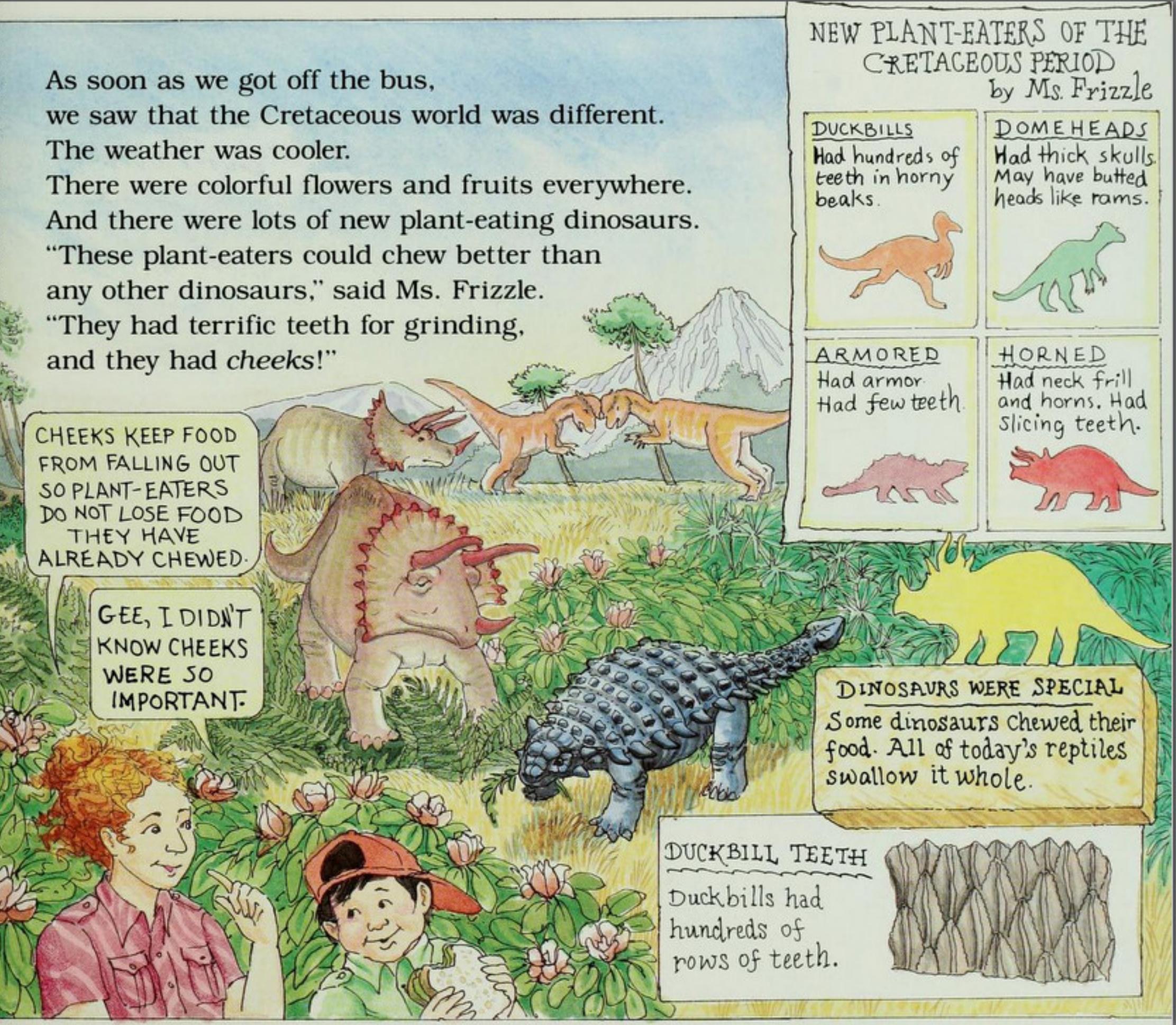
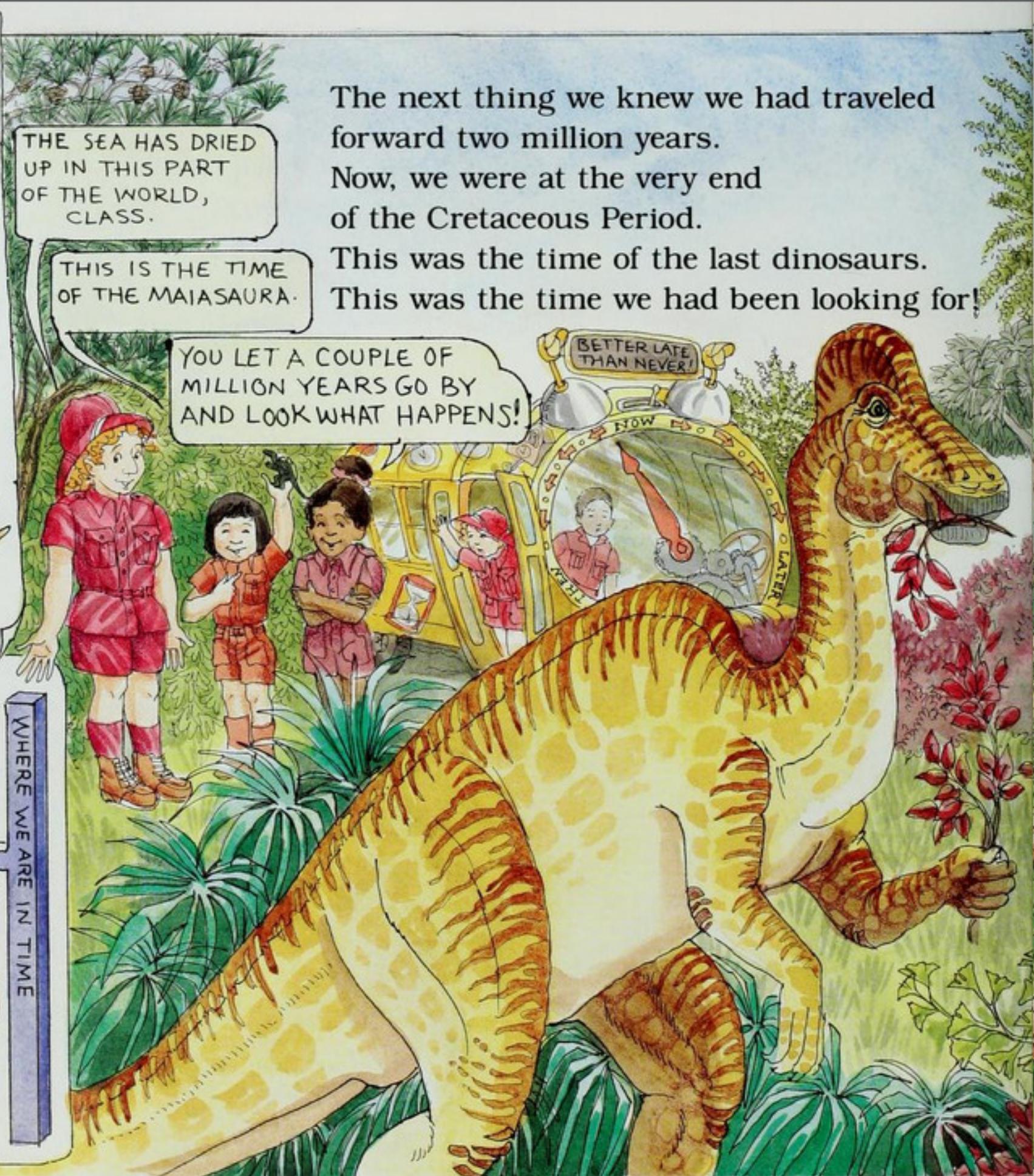
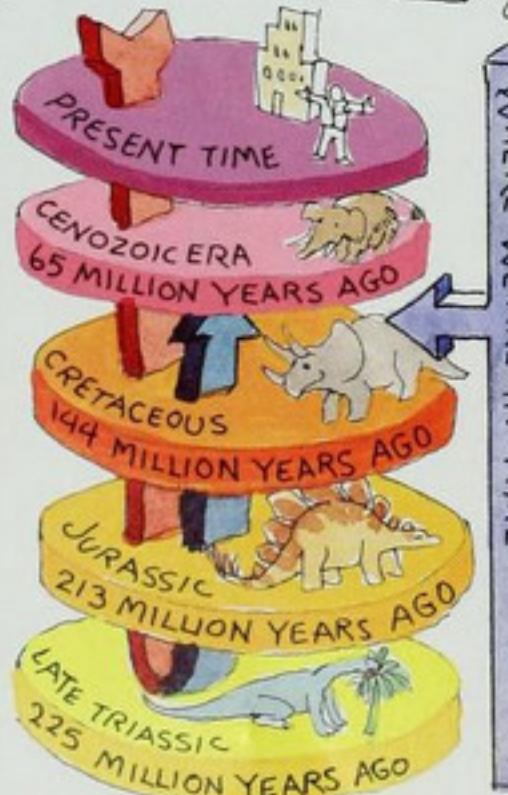


WHAT WAS THE EARTH  
LIKE THEN?

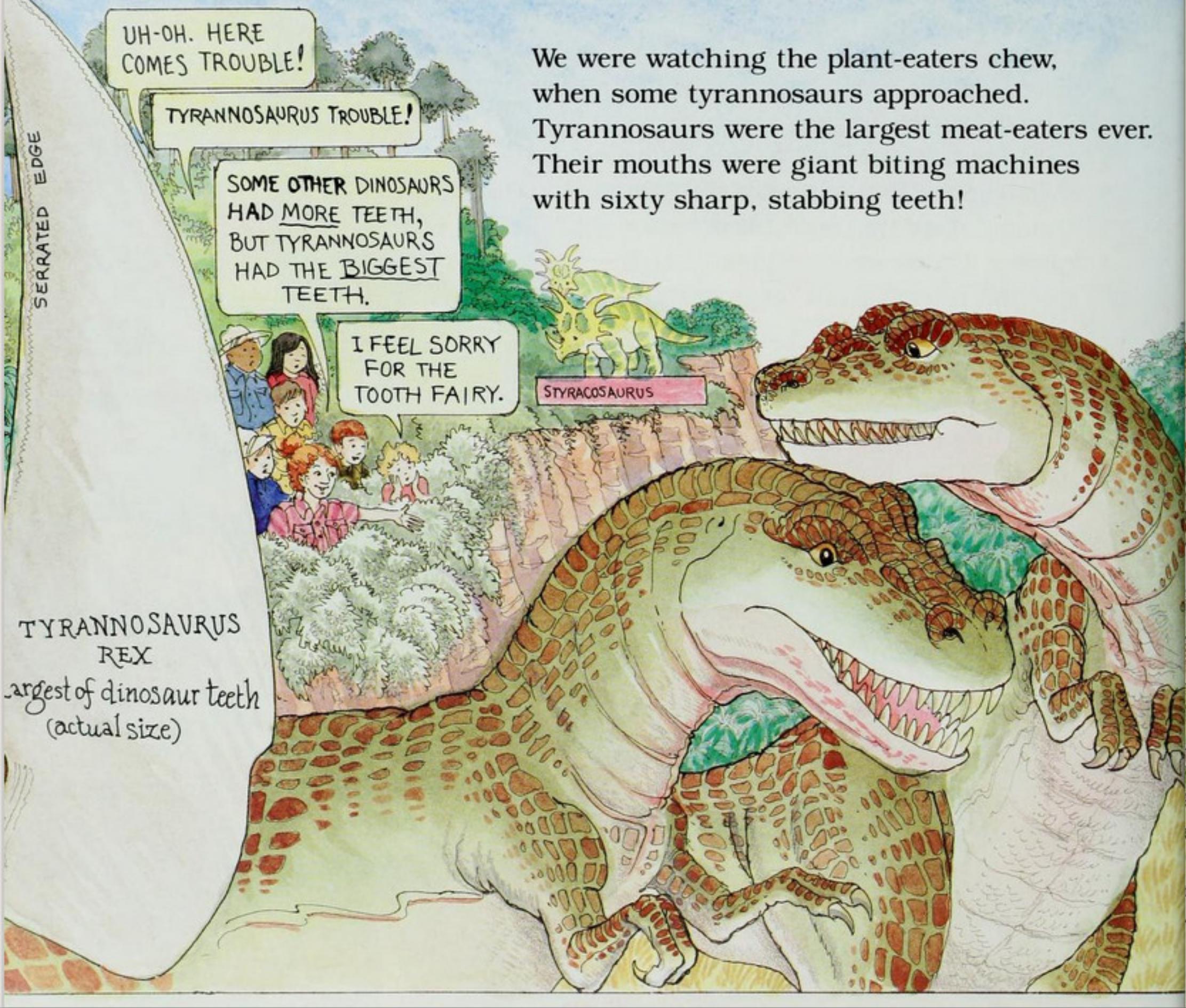


Continents had drifted  
farther apart than before.

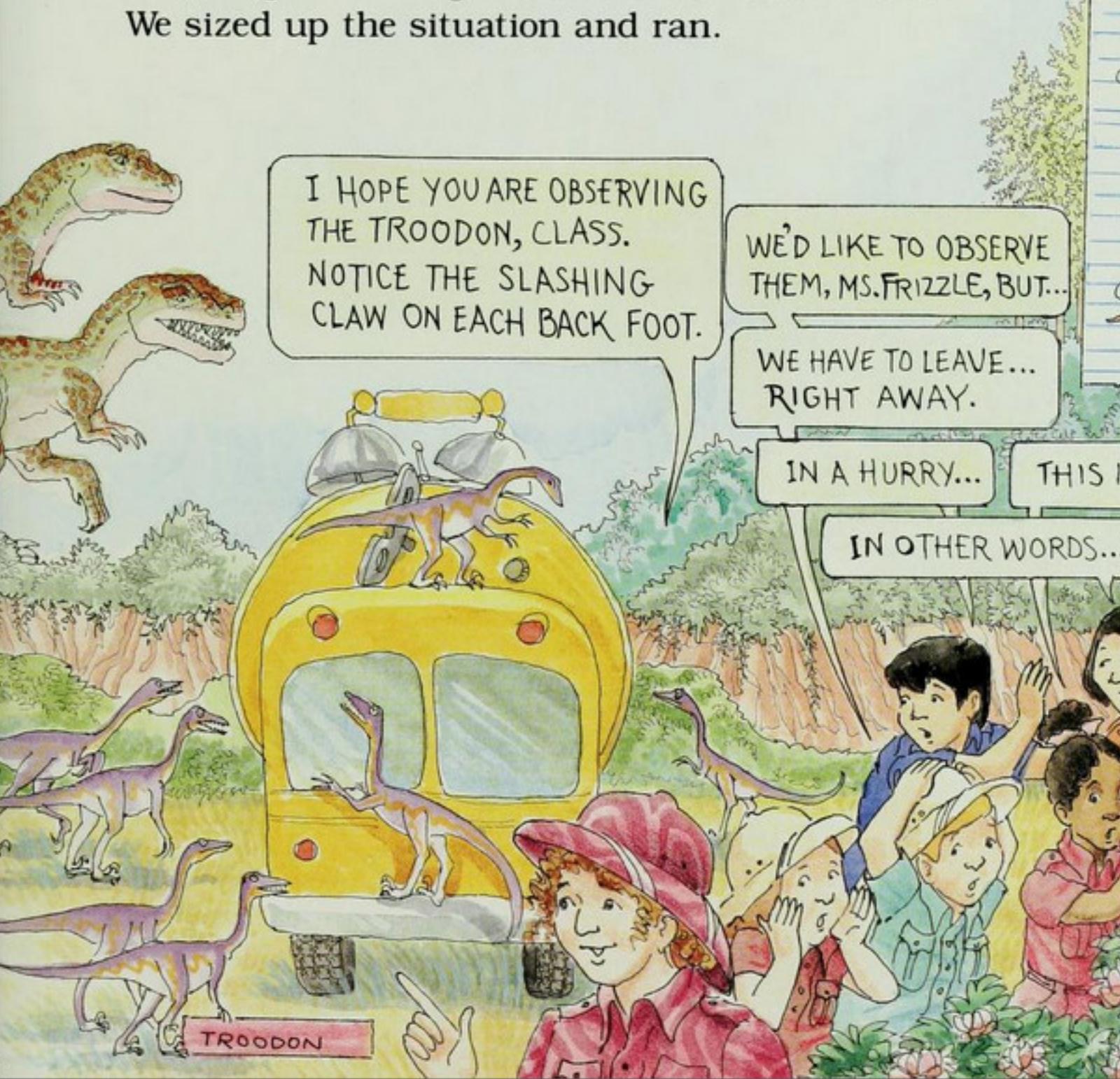
- Temperatures were cooler
- There were seasons and polar ice caps



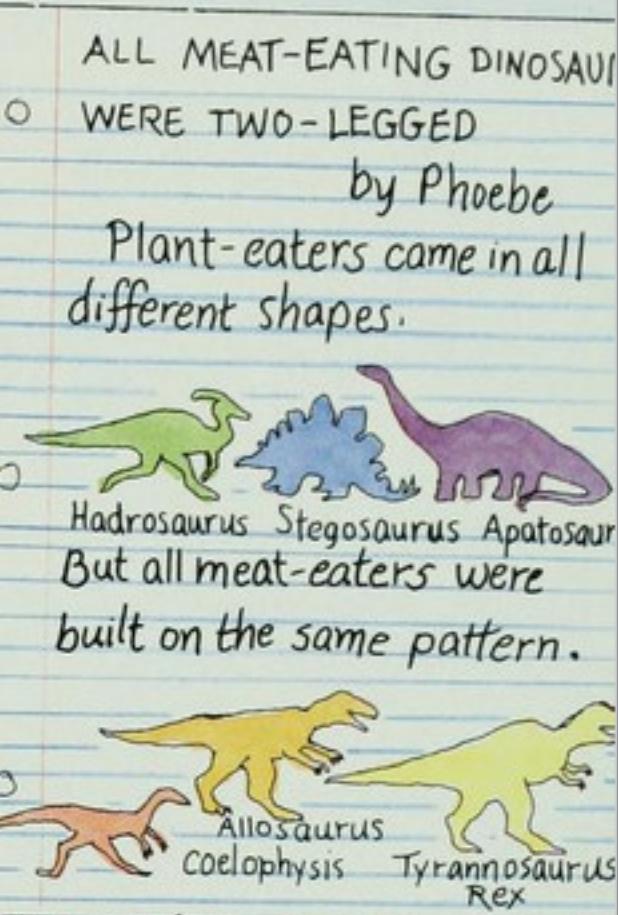
**TYRANNOSAURUS REX**  
largest of dinosaur teeth  
(actual size)

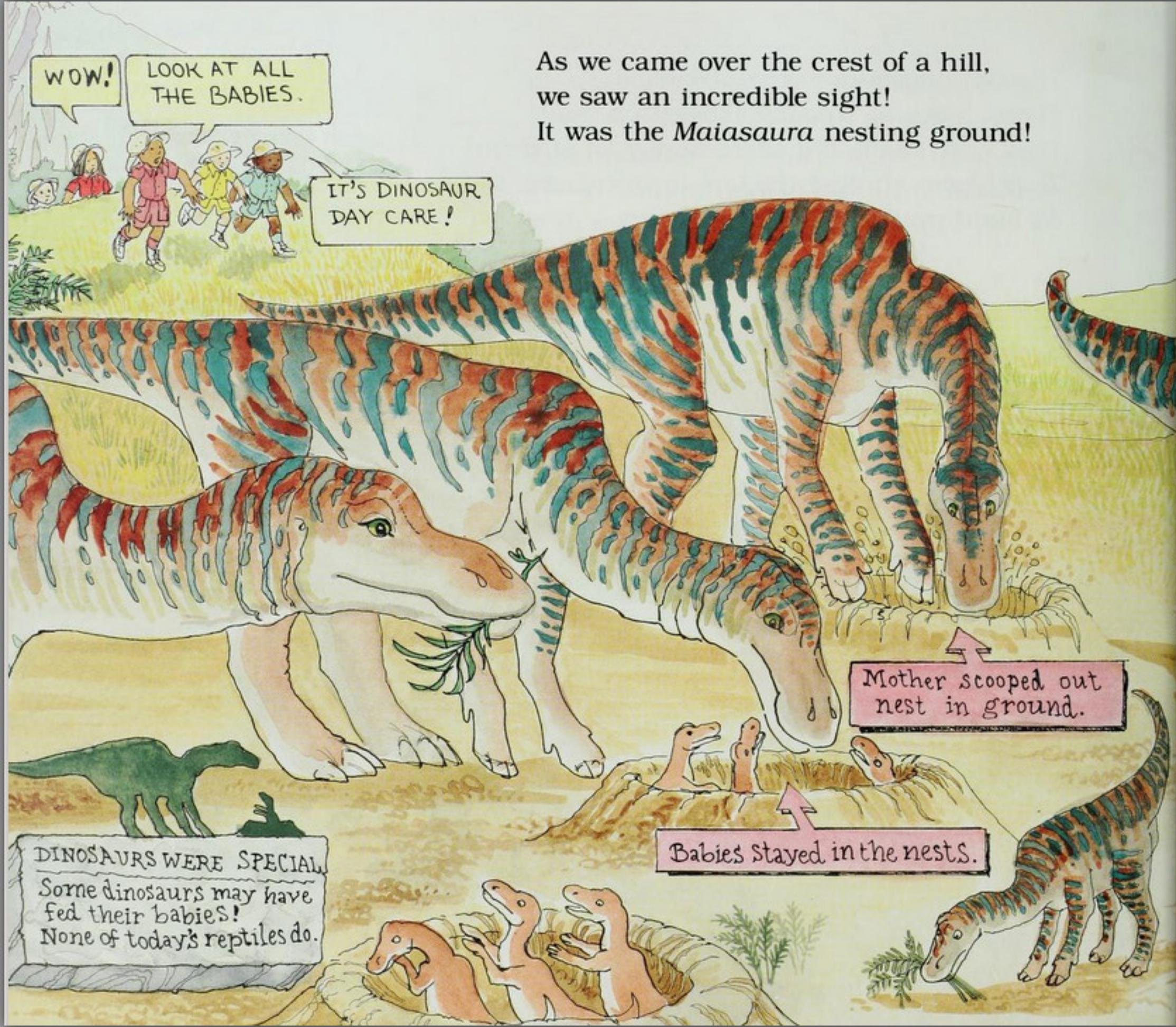


We were watching the plant-eaters chew, when some tyrannosaurs approached. Tyrannosaurs were the largest meat-eaters ever. Their mouths were giant biting machines with sixty sharp, stabbing teeth!



The tyrannosaurs were scary enough. Then a pack of *Troodon* showed up, too! They were small, but there were a lot of them! They began circling the bus to see what it was. We sized up the situation and ran.





As we came over the crest of a hill,  
we saw an incredible sight!  
It was the *Maiasaura* nesting ground!

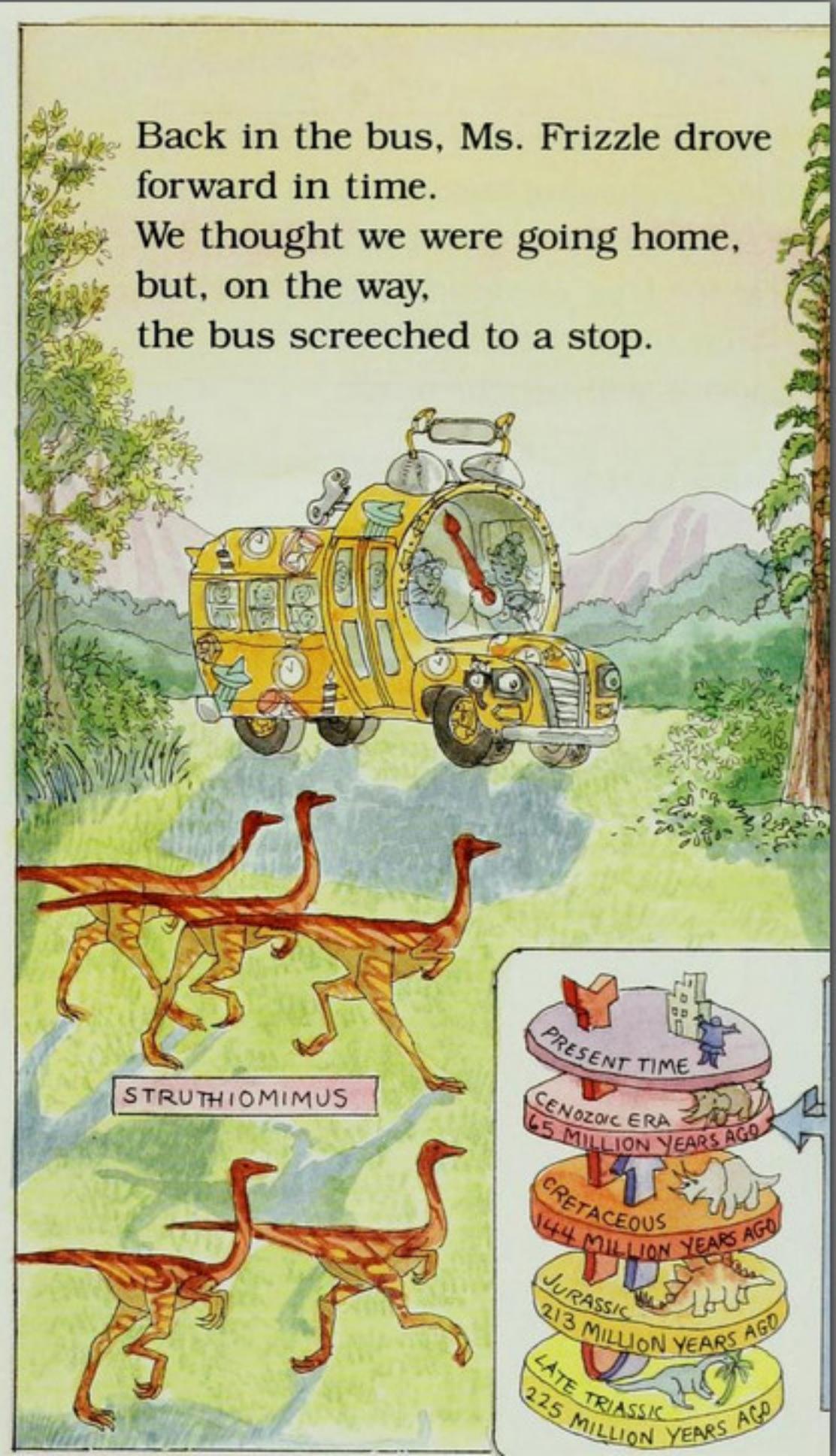


- o WHY DO WE THINK *MAIASAURA* BABIES GREW UP IN NESTS?  
by Wanda
- When scientists found the first *Maiasaura* nests, they saw:
  - Crushed eggshells, showing that babies might have stayed in nests and stepped on shells.
  - Skeletons of different sizes, showing that babies might have grown bigger in nests.
  - Worn down baby teeth, showing that babies might have eaten food brought by parents.

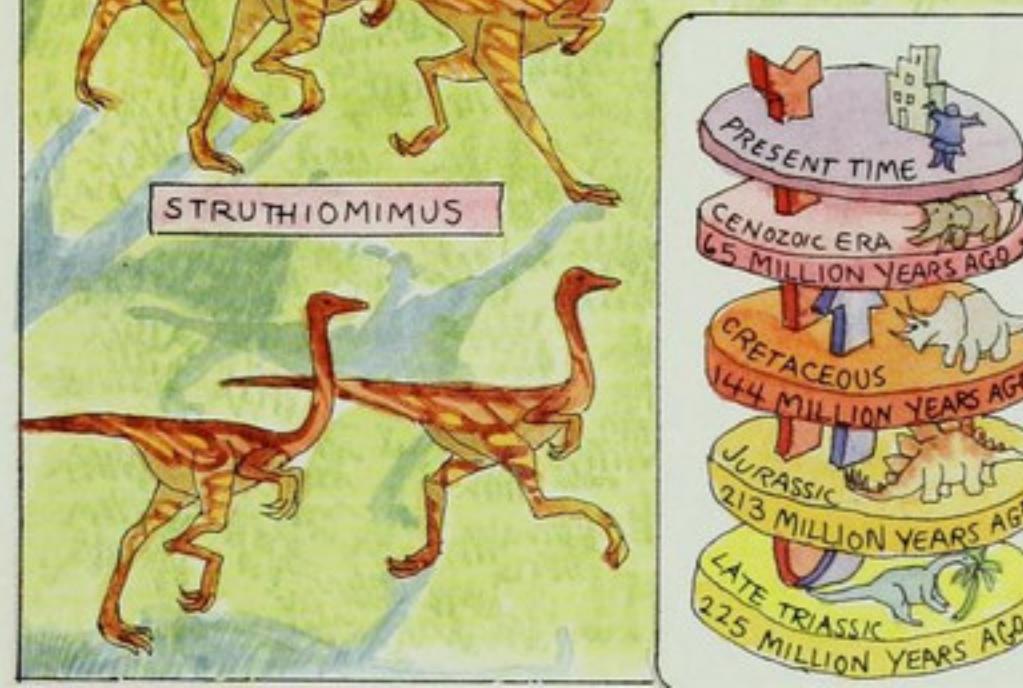


We weren't the only ones  
who had found the *Maiasaura*.  
The *Troodon* had followed us.  
They invaded the nesting ground.  
The *Maiasaura* parents defended their young.  
All at once, a sandstorm blew up.  
In minutes, a thick layer of sand  
covered the dinosaurs.

Everything happened so fast.  
There was no way we could help  
the dinosaurs.  
Maybe they would become fossils.



Back in the bus, Ms. Frizzle drove  
forward in time.  
We thought we were going home,  
but, on the way,  
the bus screeched to a stop.



"We are in the very last minutes of the Cretaceous Period," said Ms. Frizzle. A bright light was shining in the sky. "Notice that asteroid," said the Friz. "It's a huge rock from outer space. Soon it will hit the earth."

THE ASTEROID WILL CAUSE AN ENORMOUS EXPLOSION... BLACK SOOT WILL FILL THE AIR AND BLOCK OUT THE SUN... PLANTS WON'T GROW, AND MILLIONS OF LIVING THINGS WILL BECOME EXTINCT — INCLUDING THE DINOSAURS.

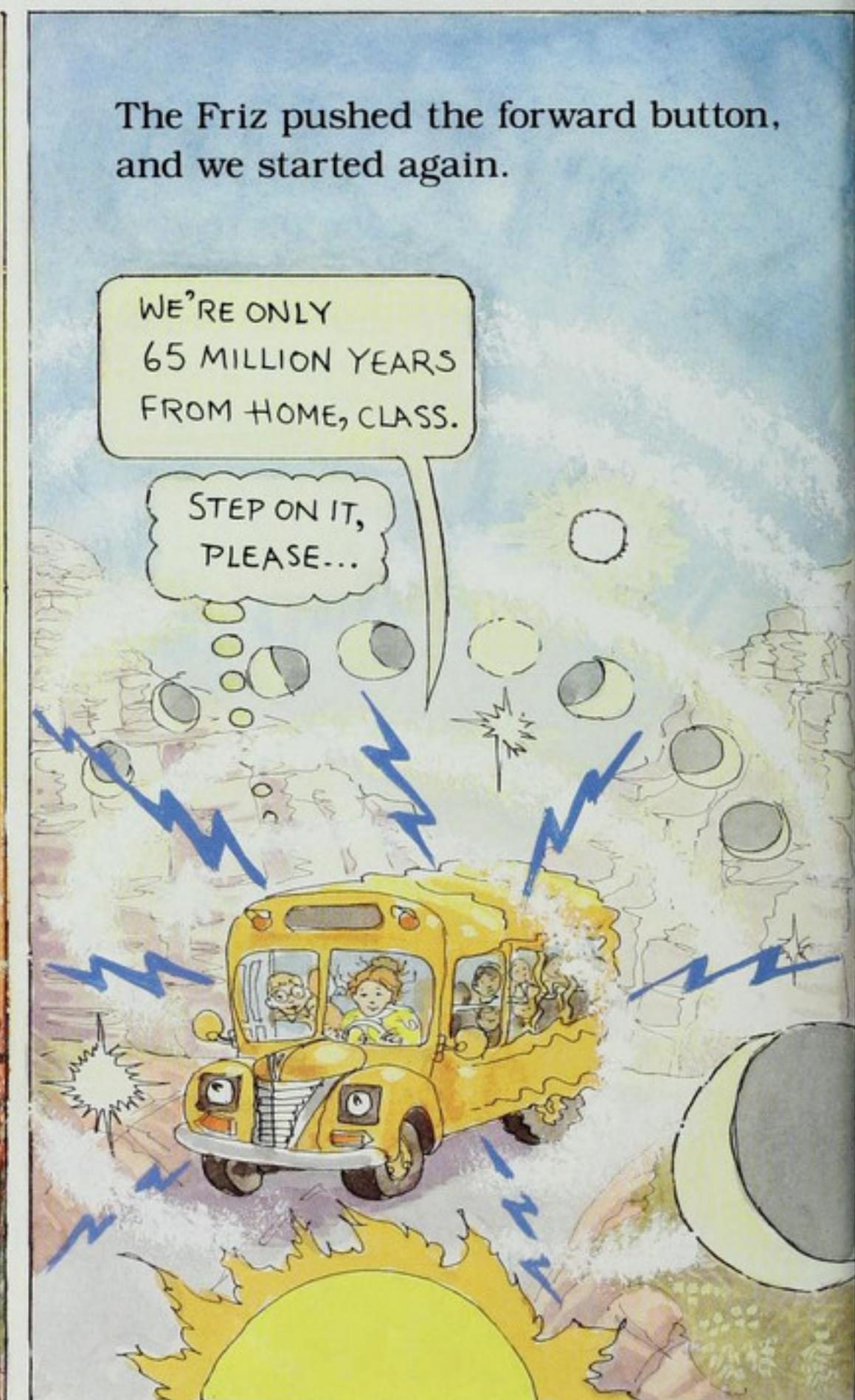
MS. FRIZZLE, COULD WE LEAVE BEFORE THE ASTEROID HITS?



The Friz pushed the forward button, and we started again.

WE'RE ONLY 65 MILLION YEARS FROM HOME, CLASS.

STEP ON IT, PLEASE...



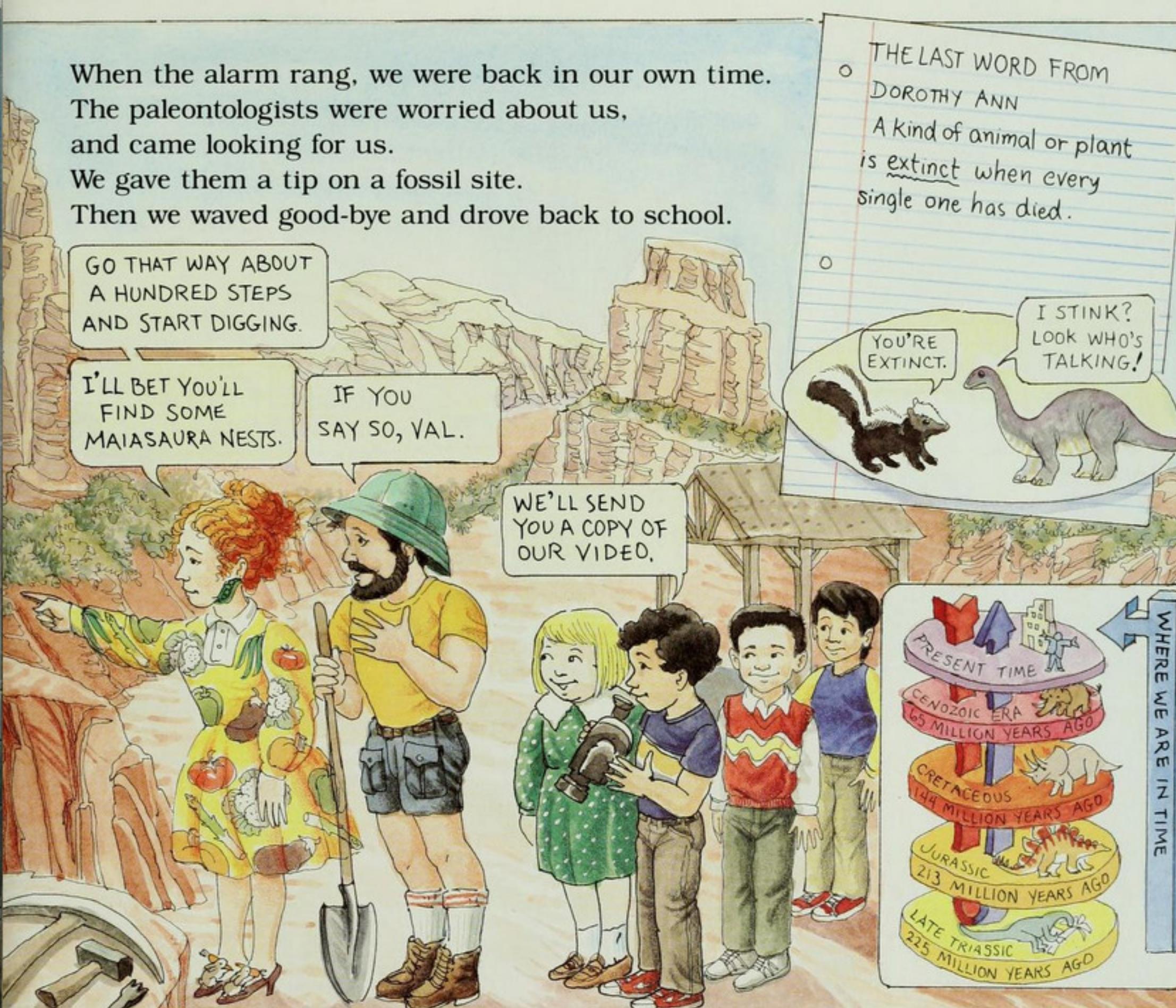
When the alarm rang, we were back in our own time. The paleontologists were worried about us, and came looking for us. We gave them a tip on a fossil site. Then we waved good-bye and drove back to school.

GO THAT WAY ABOUT A HUNDRED STEPS AND START DIGGING.

I'LL BET YOU'LL FIND SOME MAIASAURA NESTS.

IF YOU SAY SO, VAL.

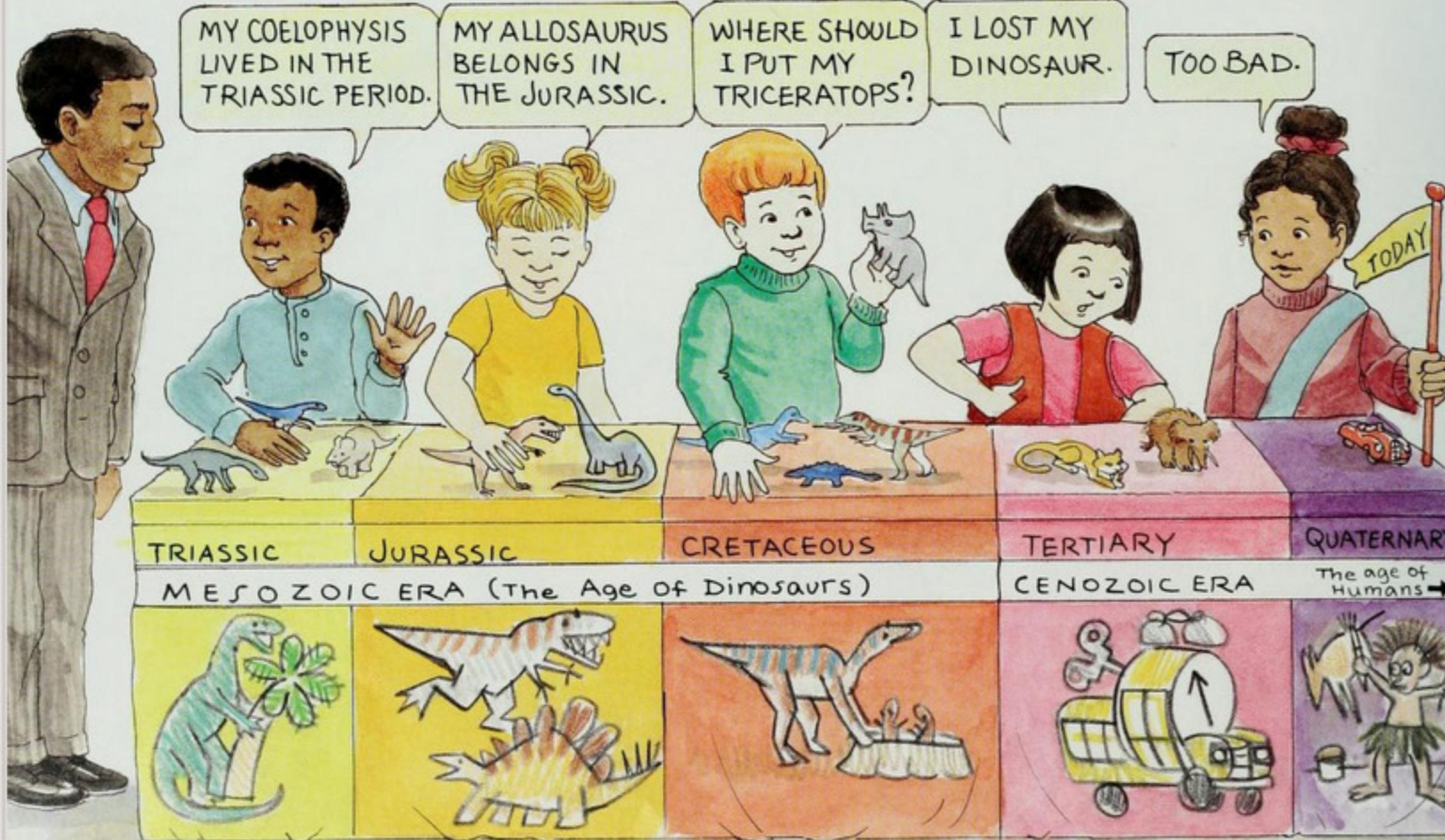
WE'LL SEND YOU A COPY OF OUR VIDEO.

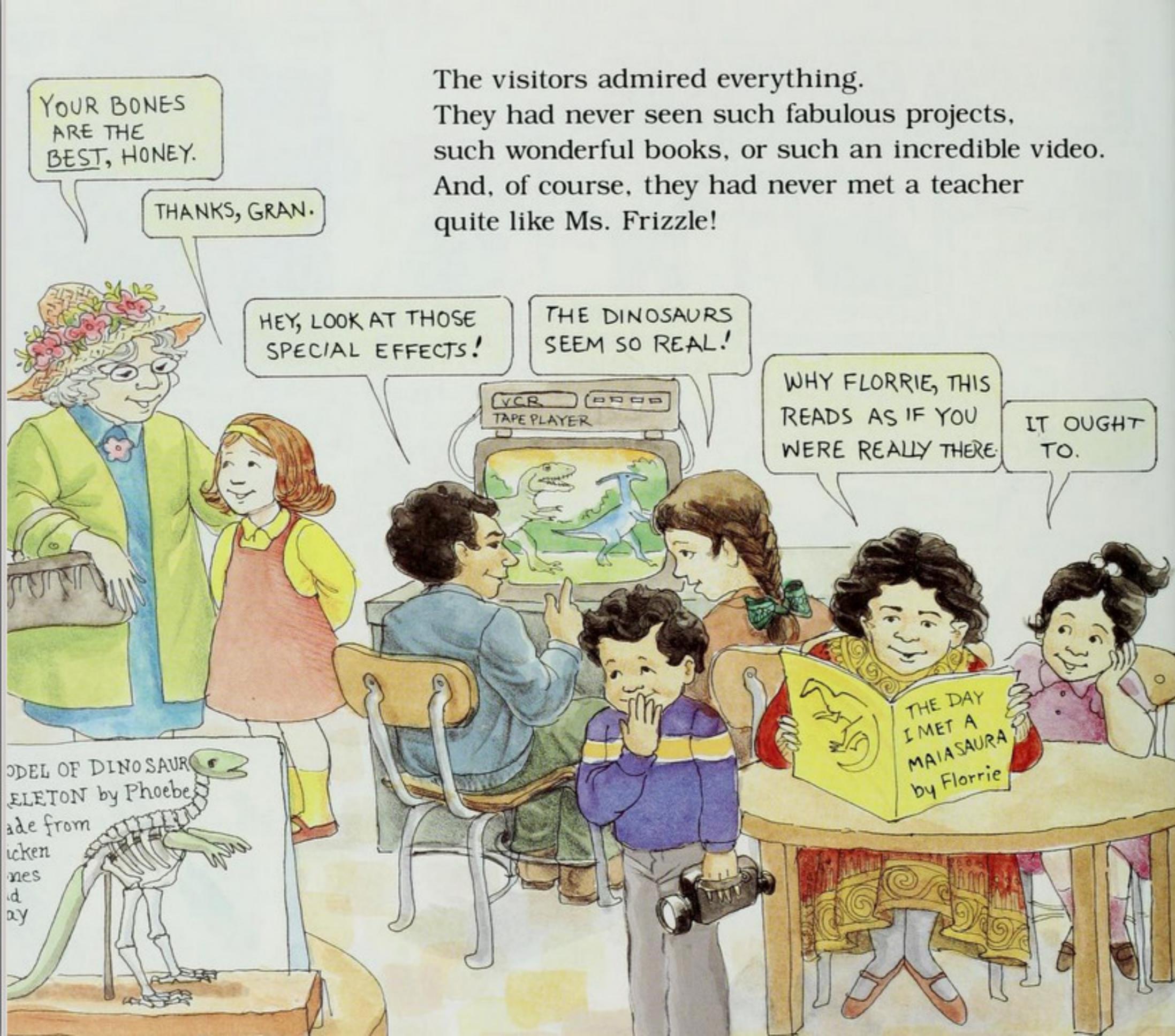


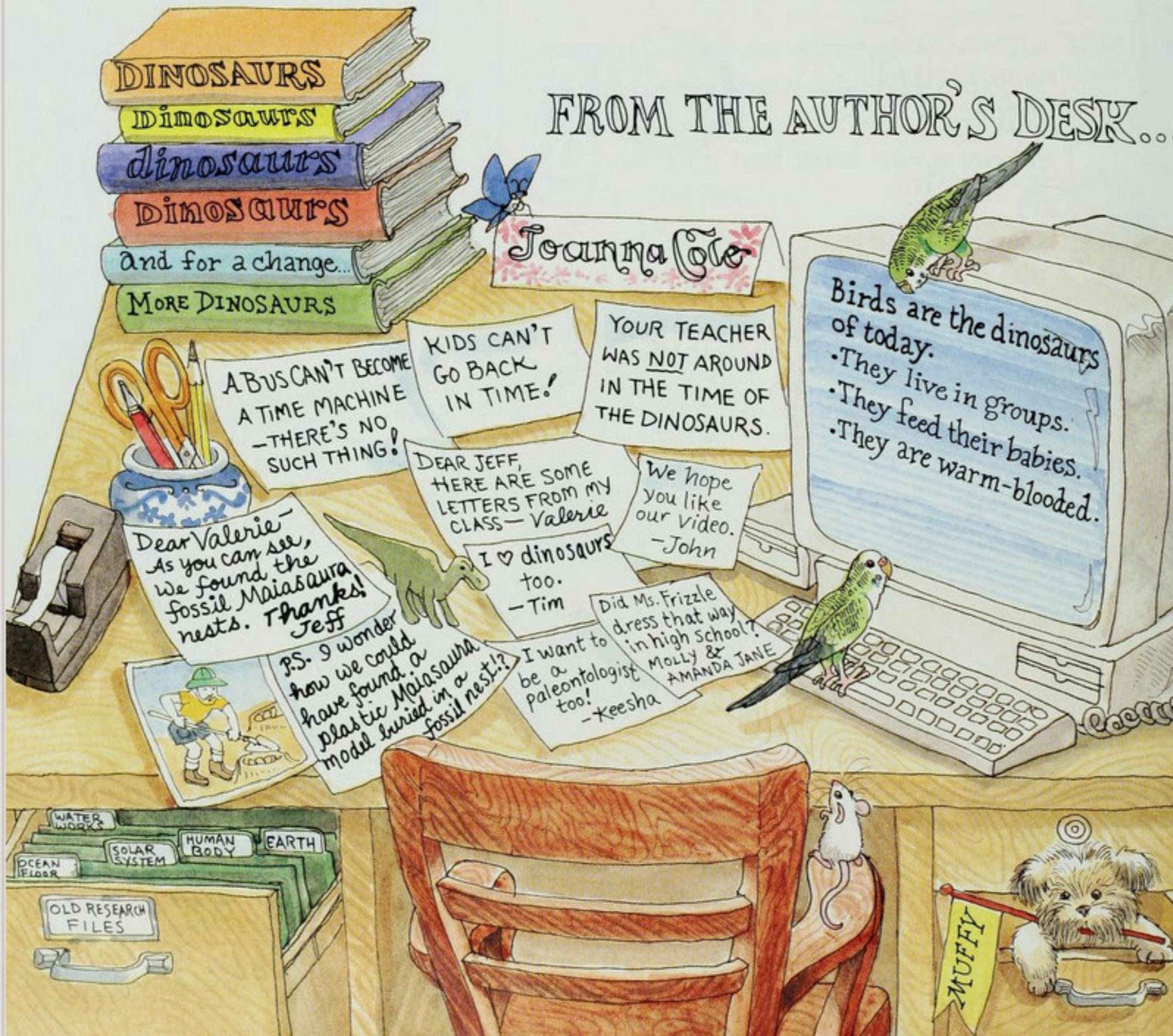
THE LAST WORD FROM DOROTHY ANN  
A kind of animal or plant is extinct when every single one has died.



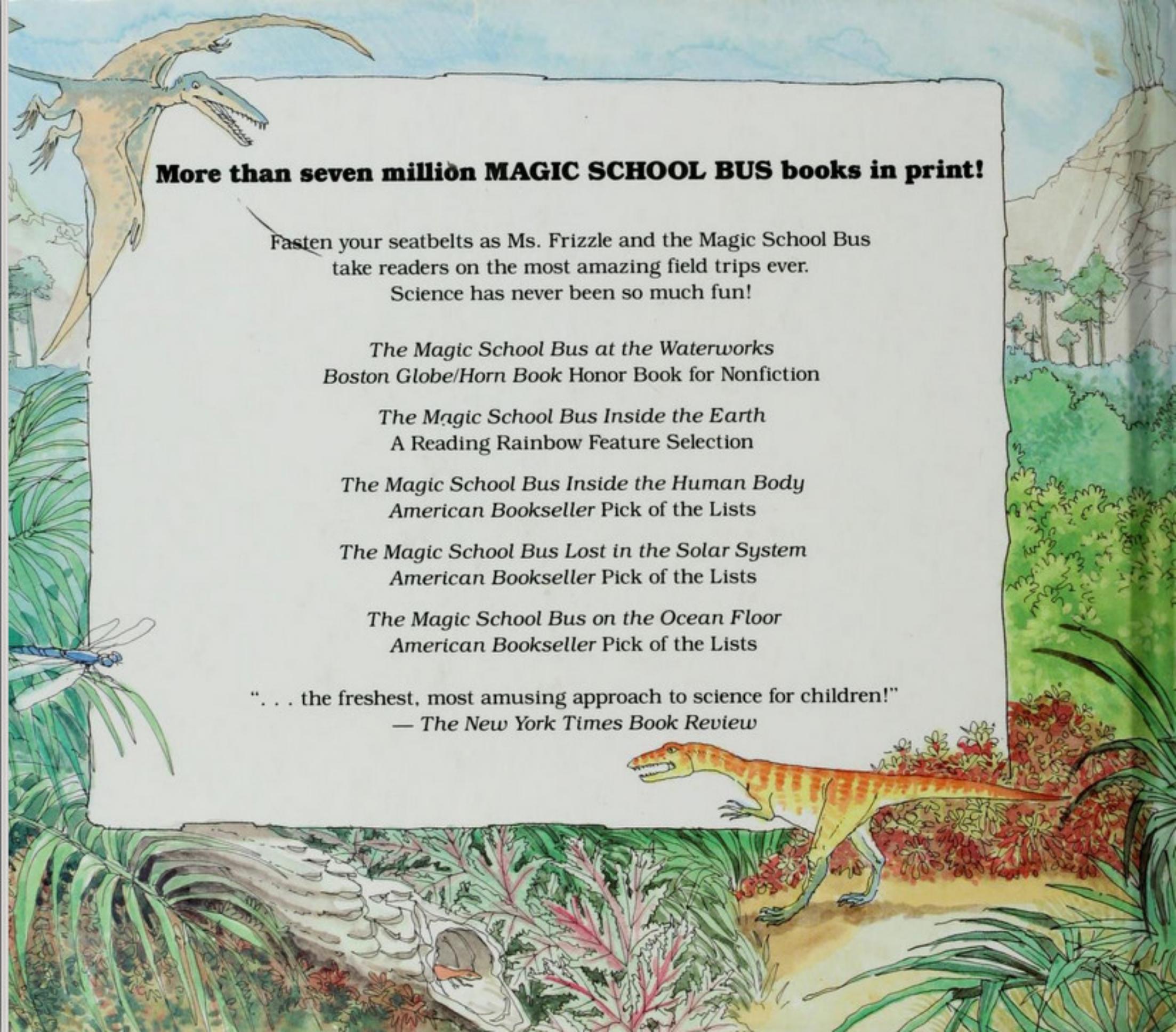
In the classroom, we made a chart of our trip to the dinosaurs. Just as we were finishing it, people started coming in for Visitors Day.











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